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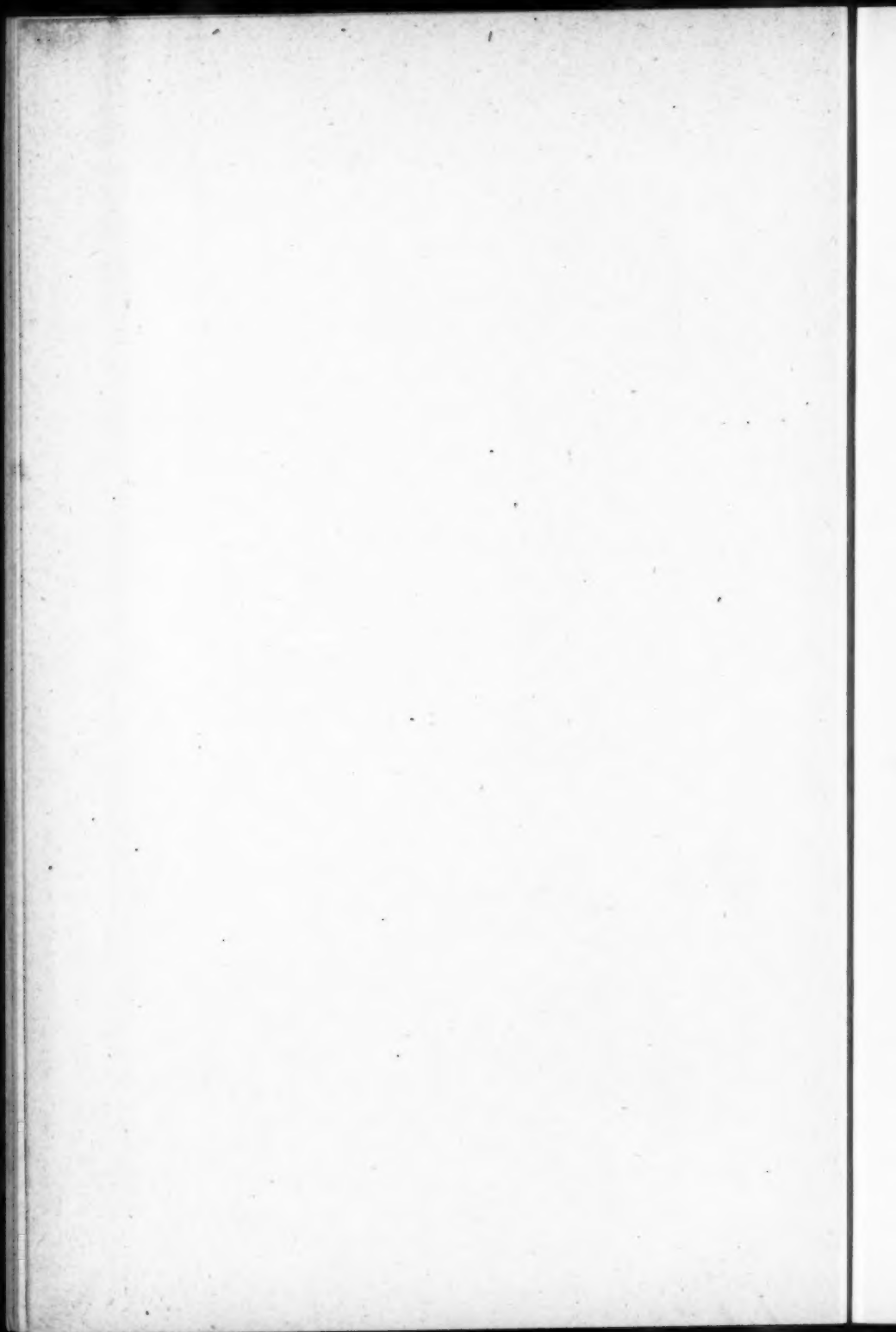
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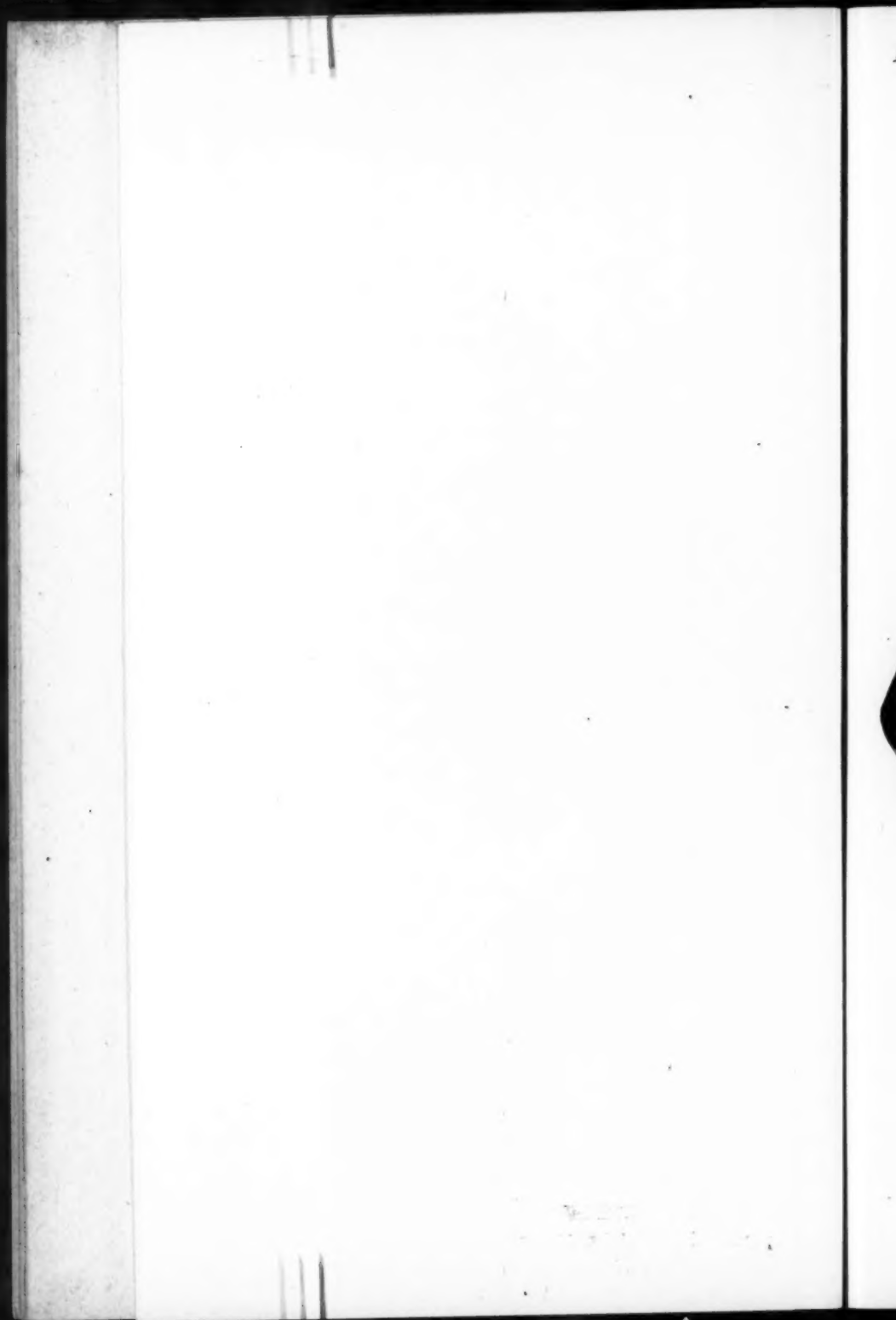




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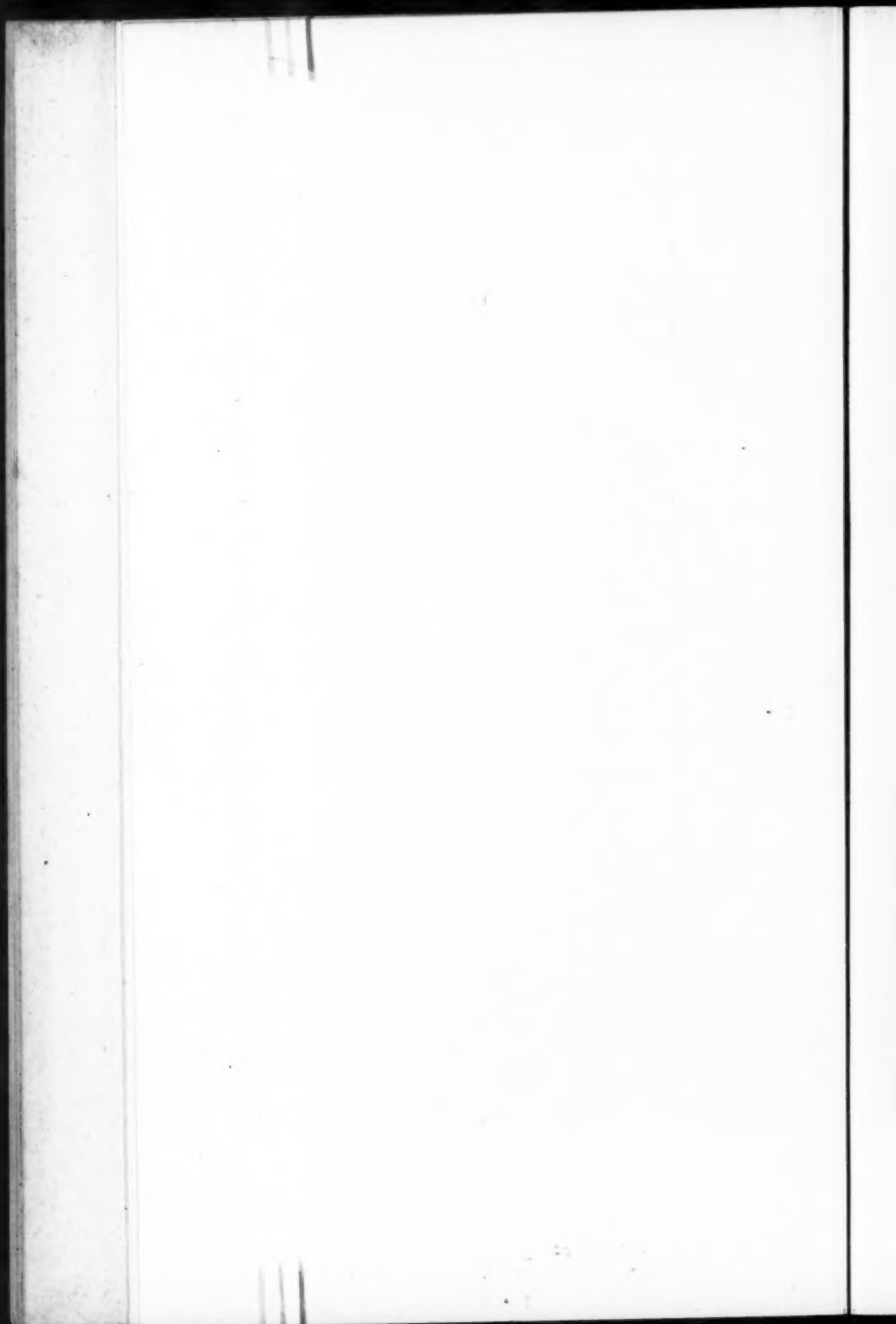


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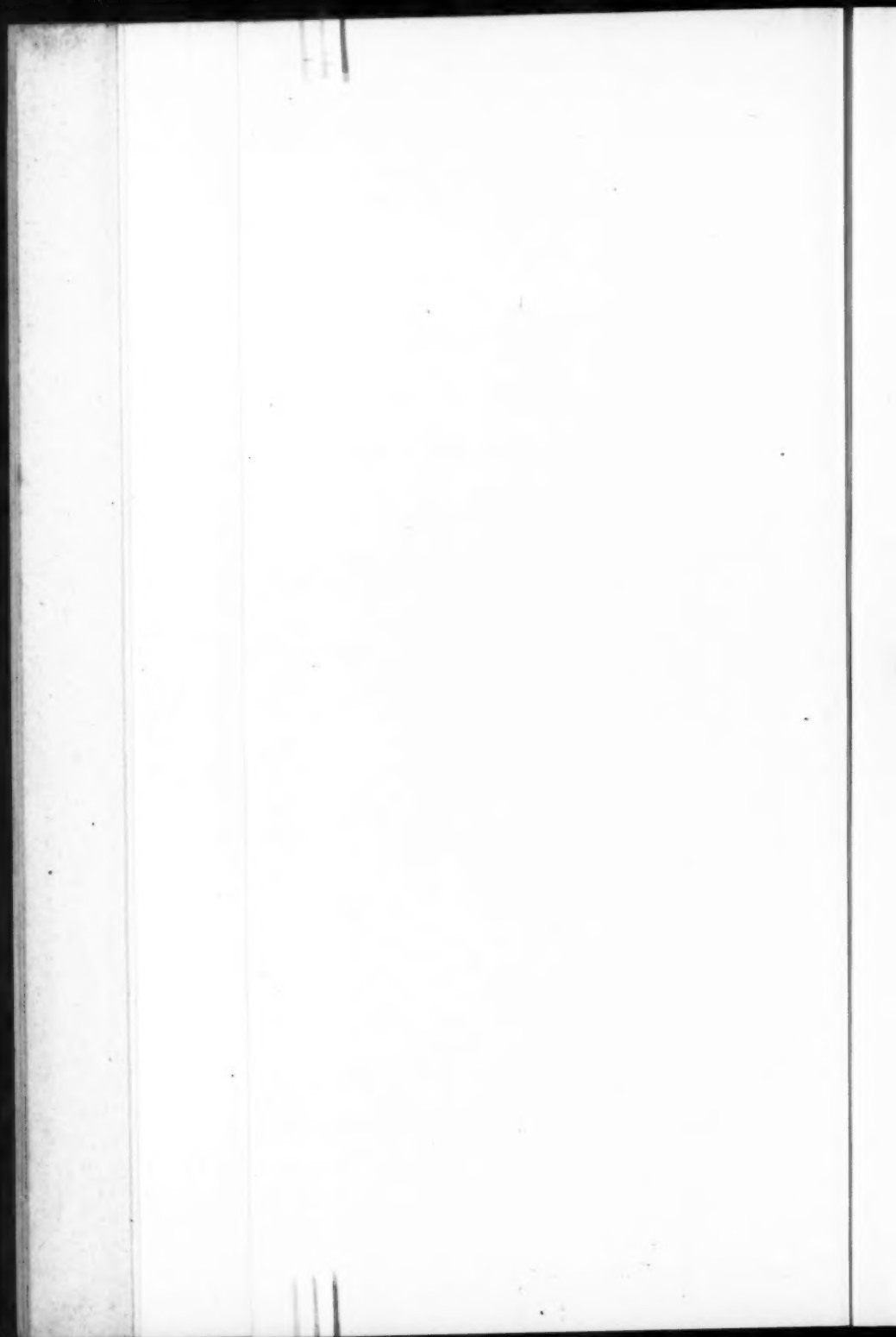


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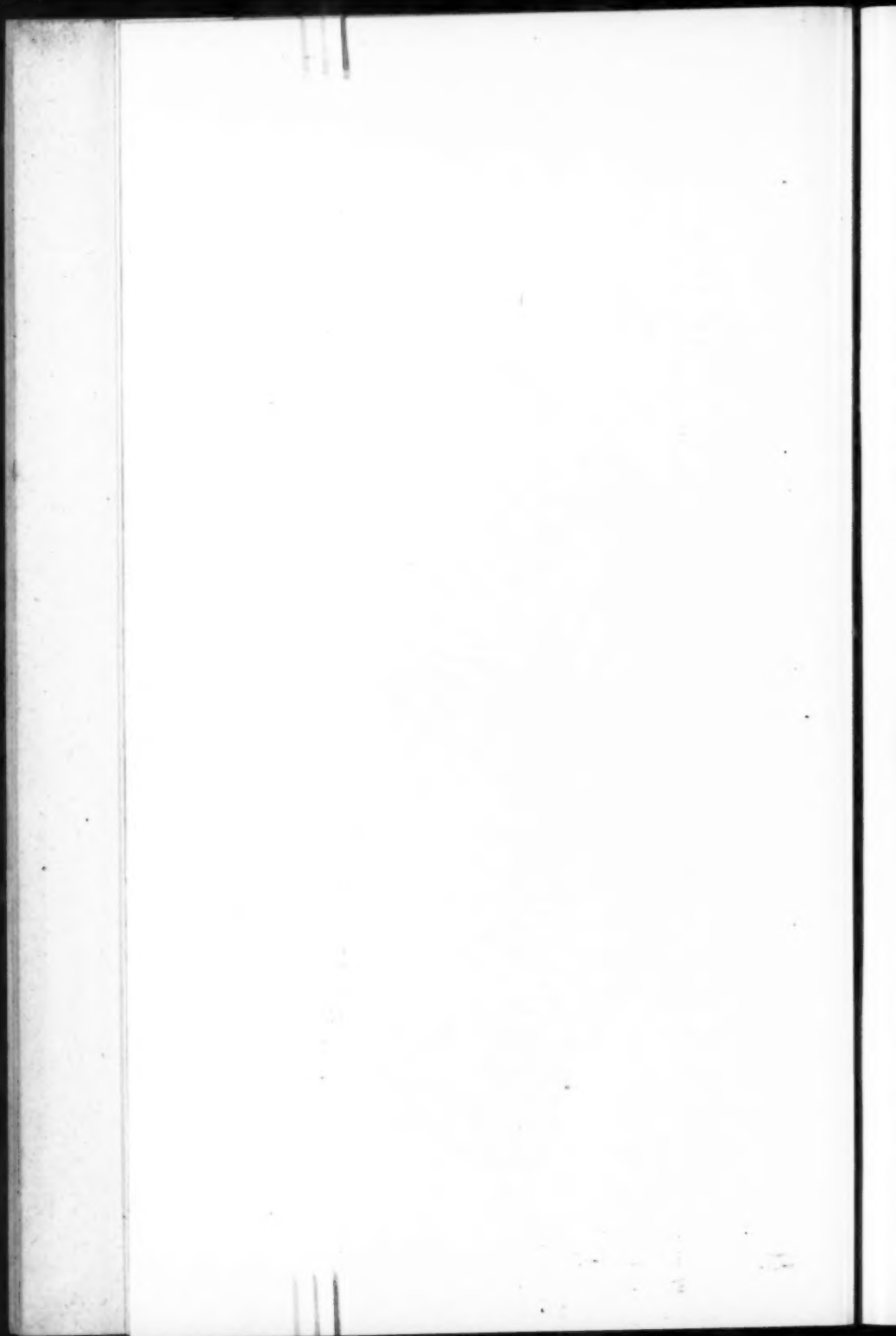


CYLIX IN THE METROPOLITAN MUSEUM; INTERIOR



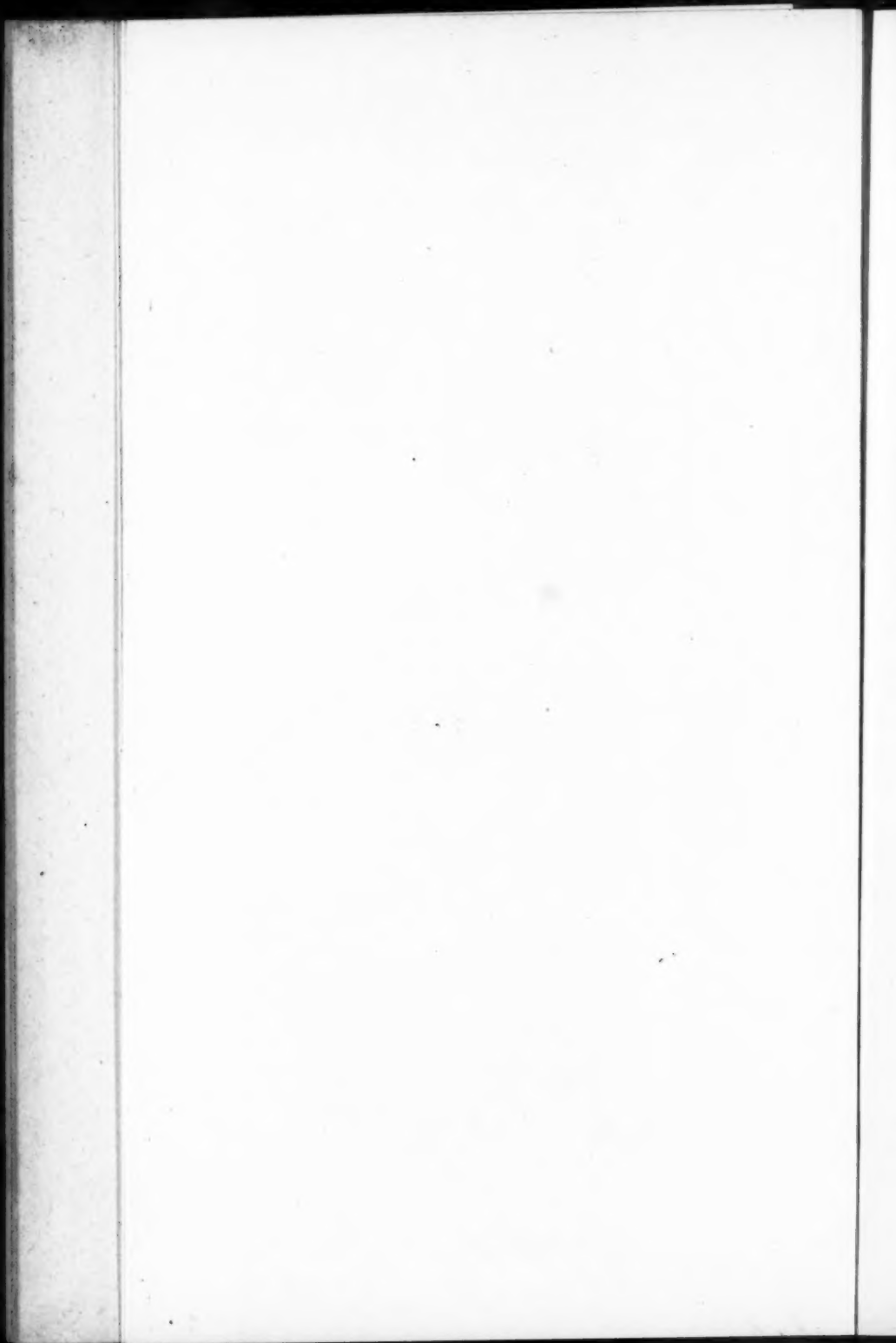


CYLIX IN THE METROPOLITAN MUSEUM; EXTERIOR, SIDE A





CYLIX IN THE METROPOLITAN MUSEUM; EXTERIOR, SIDE B



TWO VASES SIGNED BY HIERON IN THE METRO-
POLITAN MUSEUM OF ART

[PLATES I-VI]¹

WE KNOW at present twenty-seven vases signed by the potter Hieron.² They all bear his trade-mark, 'Ιέρων ἐποίησεν; but the name of the painter of the decorations is given in only one case, the fine cotyle in the Boston Museum of Fine Arts,³ which is inscribed 'Ιέρων ἐποίησεν Μάκρων ἐγραψεν. However, as the style of almost all the Hieron vases is quite uniform, the same marked characteristics occurring again and again with only an occasional increase or decrease in quality of workmanship, it is reasonable to assume that Macron was the painter of most of the Hieron vases that have come down to us.⁴ Why he signed

¹ The exterior views of these cylices (Plates II, III, V, VI) are reproduced from drawings on "photoplanes." The drawings were made by Mr. L. F. Hall, the "photoplanes" by Mr. d'Hervilly, both of the Metropolitan Museum staff.

² Cf. F. Leonhard, *Über einige Vasen aus der Werkstatt des Hieron*, pp. 5. ff.; also J. D. Beazley's forthcoming book, *Attic Red-figured Vases in American Museums*. This number is exclusive of separate handles or feet with his signature, and inclusive of the two cylices here described.

³ Furtwängler-Reichhold, *Griechische Vasenmalerei*, II, pl. 85.

⁴ Hartwig, *Die griechischen Meisterschalen*, pp. 302 f., was inclined to think that Macron was not the painter of the other 'Ιέρων ἐποίησεν vases. Furtwängler, however (Furtwängler-Reichhold, *Griechische Vasenmalerei*, II, p. 130), thinks all were undoubtedly painted by the same person. This view has been taken by most recent writers; cf. Leonhard, *op. cit.* pp. 7, 26 ff., and Buschor, *Griechische Vasenmalerei*, p. 173. J. D. Beazley in his forthcoming book gives a list of 111 vases and fragments by Macron. This includes all vases signed 'Ιέρων ἐποίησεν (with three exceptions), as well as the vases assigned to him on stylistic grounds. The three exceptions are: The Eos-Cephalus cylix in Boston (cf. Hartwig, *Die griechischen Meisterschalen*, pls. XXXIX, 2, XL, and E. Robinson, *Boston Museum Annual Report*, 1895, p. 19, No. 15); the Telephus cylix in Boston (cf. Pollak, *Zwei Vasen aus der Werkstatt Hierons*, pls. I-III, and E. Robinson, *op. cit.* 1898, p. 66, No. 40); and a cantharus in Boston (cf. Pollak, *op. cit.* pls. IV-V, p. 28, and E. Robinson, *op. cit.* 1898, p. 68, No. 41); all three of which are clearly by another hand. I wish here to acknowledge my great obligation to Mr. Beazley for having sent me a copy of his list of Macron's works before the appearance of his book.

only one of these vases we do not know, and it is idle to speculate too much on such a question when we know so little of the conditions in Athenian potteries.

In the Metropolitan Museum of Art there are two cylices signed by Hieron, one acquired in 1908, the other in 1912. The former is unpublished, except for a short descriptive note and view of one side of the exterior, which appeared in the *Museum Bulletin*, June, 1910, p. 142, fig. 5, p. 143. The other (No. 7 in Klein's list of Hieron vases)¹ was described as long ago as 1837 by J. de Witte in his *Description d'une collection de vases peints et bronzes antiques provenant des fouilles de l'Etrurie*, pp. 7-8, No. 12, but was subsequently lost.² It was purchased by the Metropolitan Museum from a dealer in Paris. Though the subjects of its decorations have been briefly referred to by de Witte and subsequent authors, and the inscriptions on it transcribed,³ no illustrations of it, except the cut in de Witte's catalogue, have as yet appeared. The importance of these two vases makes it desirable that they should at last be adequately published and thus be made available to all students.

Of the two vases by far the finer is the cylix acquired in 1912.⁴ The preservation is unfortunately not very good. It has been broken in many pieces and has had to be put together with some restorations. Moreover, the surface has suffered considerably in many places. Where the lines are still visible they have been indicated in the drawings. The red color used for inscriptions, fillets, wreaths, and flowers, has largely disappeared, leaving merely a discoloration. The inscription . . EPON EΠOIESEN⁵ is incised on the under side of one handle. The subject of the decorations is a favorite one with Macron—men and youths in

¹ Klein, *Griechische Vasen mit Meistersignaturen*, p. 166. References to other descriptions of this vase are given by Leonhard, *op. cit.* No. 30.

² Hartwig, *Die griechischen Meisterschalen*, p. 272, note 1, Pollak, *Zwei Vasen aus der Werkstatt Hierons*, p. 29, and Leonhard, *loc. cit.*, refer to it as "verschollen."

³ In some cases incorrectly, see below, p. 3.

⁴ Accession No. 12 231.1. Height, $5\frac{1}{8}$ inches (13.2 cm.); diameter of top, $13\frac{1}{4}$ inches (33.7 cm).

⁵ De Witte's and Klein's transcription, IEΠON EΠOIESEN, is misleading. There is a break just before the first E, and of the I only a minute part is now visible; as there is plenty of room for the H, the name was probably spelled HIEΠON as usual. Pollak's comparison (*op. cit.* p. 29) of the absence of the aspirate in our inscription with that in the inscription on the Boston cantharus is therefore out of place.

amatory converse with women. In the interior (PLATE I) is a woman seated on a stool holding a fillet in both hands. In front of her stands a bearded man, one hand on his hip, the other on the woman's arm. She is clothed in a chiton with over-fold and *kolpos* and has a necklace and fillet in her hair; he wears a mantle which leaves his right shoulder and chest bare, as well as a wreath and a bracelet. In the field are the inscriptions ANTIΦ(A)NEΣ K . . . TOΣ¹ KALE. Encircling the scene is a band of double interlocking maeander of the form usually employed by Macron.

On each side of the exterior are three groups of men with women in various postures. The name of each figure is inscribed. In the centre of one side (PLATE II) is a woman (KEΛITPAΣTE)² climbing on the lap of a bearded man (EVKΛEΣ)³ who is seated on a chair. To the right of this group is a girl (ΓΕΛΕΑ) stretching out both arms to a youth (NIKOΘENEΣ) and touching him coaxingly under the chin; to the left a woman (NIKOTPATE) is placing her hand on a youth's (NIKON) shoulder, while he stretches out one arm to her. The central group on the other side (PLATE III) consists of a youth (ΔΙΟΝΙΣΙΑENEΣ) and a girl, not named, about to kiss each other. To their right is a bearded man (ΛΥPKΙΑΣ) offering a flower to a woman (NAVKΛEA KAL(E)); to the left a woman (ΑΦΡΟ(Δ)ΙΣΙΑ) offers one to a youth (ΧΑΡΙΝΙΔΕΣ). The men all wear himatia and wreaths and carry knotted sticks, while the women wear chitons and fillets. In the field on one side is a mirror, on the other a flute-case. Below one handle is a stool with a cushion; below the other a palmette and scroll ending in a lotos flower.

There are known at present about forty "conversation scenes" attributable to Macron.⁴ They do not always represent men with women, often we have men with youths. But the motives are always similar. Generally we have groups of two figures facing each other, one caressing the other, or offering one another gifts, or merely conversing. Sometimes these scenes are quite monotonous and show little action or animation. The paint-

¹ Klein, *loc. cit.*, Kretschmer, *Die griechischen Vaseninschriften*, p. 119, Wernicke, *Vasen mit Lieblingsnamen*, p. 15, Leonhard, *loc. cit.*, and others copy de Witte and read Καλτος. There is a piece missing between the K and the T, so that the restoration Καλτος is purely imaginary.

² Klein's reading, KALITPAΣTE, is incorrect.

³ Klein's reading, EVKEΣ, is incorrect.

⁴ I am following here Beazley's list. For the signed specimens cf. Klein, *op. cit.* Nos. 1-8.

ings on our cylix are among the most successful. The group of the girl climbing on the lap of the man is charmingly graceful; so is that of the youth and the girl kissing each other; and the girl with both arms outstretched touching the youth's chin is very lifelike. The rendering of the draperies, always Macron's special gift, is of great delicacy, and shows an extraordinary facility in line drawing. Very effective is the occasional use of diluted glaze for the indication of folds, hair, or muscles.¹

A comparison of the figures on our cylix with those in other "conversation scenes," shows striking similarities both in postures and grouping. On a cylix from the Bourguignon collection, now in Boston,² are close parallels to our groups of the woman climbing on the man's lap, of the girl holding out both hands to a youth, and of the seated woman faced by a standing man. The figure of the man with his right hand on his hip and holding out a flower in his left is almost identical with a figure on a cylix in Vienna,³ and the woman facing him with one hand raised is very like one on the Boston cylix just mentioned, except that the position is reversed.

In addition to these similarities in composition, the figures on our cylix show all the stylistic characteristics familiar from Macron's other paintings. They have the same long, flat skulls, and that peculiar profile with drooping under lip and prominent chin which is an unfailing criterion of this master's work. The draperies are painted in his rich and delicate style, and several chitons have the characteristic deep *kolpos*, while the mantles are drawn in simple, large folds. The outlines of the figures both of the men and the women appear beneath the draperies. The treatment of the hair is likewise characteristic; it is painted either solid black or in fine brush lines on a ground of diluted glaze; while the contours are drawn either in a simple curve or marked by a series of large, consecutive dots.

Macron's drawing of hands and feet is one of his weakest points. The hands are generally large and clumsy, while the feet are too short. On our cylix there are also many examples of poor draw-

¹ Owing to the worn state of the surface many of these lines have become obliterated. They can still be seen on the left sleeve of the woman in the interior scene, and the sleeves of Πελία and of Κελίραστρ. They are also used for the whiskers of Νυκθέρης and the hair on the chest of Ἀντιφάνας.

² Cf. Hartwig, *Die griechischen Meisterschalen*, p. 280.

³ Cf. *Wiener Vorlegeblätter*, Ser. C, pl. 4.

ing in this respect, but especially in the hands placed on hips. The paraphernalia used in our scenes,—the stools, chair, mirror, flute-case, knotted sticks, and the flowers painted in red,—all occur again and again on Macron's works.

The second cylix in the Metropolitan Museum signed 'Ιέρων ἐποίησεν¹ is a good average example of Macron's work, but it does not reach the high level of execution attained in the other cup. Though the surface is in better condition, there are more pieces missing, including the foot and the larger halves of both handles. Fortunately the part of the handle with the inscription HIEPON EΠOIESEN has been preserved. The subjects chosen for representation are again "conversation scenes," but this time between men and youths. In the interior (PLATE IV) a bearded man leaning on a knotted staff watches a seated youth who is bending over to tie his sandal. The man is wrapped in his himation, while the youth has thrown his loosely around the lower part of his body; both wear wreaths. Behind the man is a stool with a cushion. Encircling the scene is a band of maeander of the same type as that on the cylix just described.

On one side of the exterior (PLATE V) are three groups of two, each consisting of a bearded man and a youth. They stand facing each other, offering each other flowers. All wear himatia and wreaths, and most of them carry knotted sticks. In the background are sponges and strigils suspended from the walls. On the other side (PLATE VI) is a group of three in the centre, consisting of a seated man playing the lyre, with two others watching him, and a group of two on each side, one of a man and youth facing each other, the other of a seated youth playing the double flute with a draped figure before him, little of which remains. All figures are either wholly or partly draped in their himatia, and wear wreaths; some carry sticks, others flowers. In the background a sponge is suspended. Below the handles are stools with cushions. Red paint is used throughout for the wreaths and flowers; also for the sandals in the interior picture, and for the cords by which the sponges and strigils are suspended.

The same stylistic characteristics enumerated in the discussion of the other cylix will be found also in the figures of this one, except that the contours of the figures are, here, only partly indicated beneath the draperies. But though the drawing has

¹ Accession No. 08.258.57. Height as restored (the foot is new), 4½ inches (11.7 cm.); diameter, 13 inches (33 cm.).

the easy flow of all Macron's work, the deficiencies of his style are also particularly apparent. The composition, though well balanced, is monotonous, the movements are stiff, the expressions almost morose. There is no attempt at originality in the poses; we are familiar with them from many other representations. The seated man in the centre of the scene will be found on a cylix in Berlin;¹ the youth playing the double flutes on a cylix in Vienna,² which also furnishes parallels for the youth wrapped in his himation,³ and for the man with his right hand on his hip and a flower in his left.⁴ The youth leaning forward, holding up a flower in his right hand, and the man in the interior picture watching the youth are almost identical with figures on a fragmentary cylix formerly in the Bourguignon collection.⁵ The cushioned stools and the suspended sponges are favorite devices in Macron's pictures.

But what is even more striking than the monotonous repetition of motives is the lack of vitality in the composition. Though this is especially the case on our cylix, it is an inherent fault of Macron. He seems to have been wanting almost entirely in dramatic sense. This is most apparent when we compare his work with that of the painter of the vases signed Εὐφρόνιος ἐποίησεν. There every scene has some central motive and every figure in it plays its part in this motive in a convincing, dramatic way. Such composition and such individualization were beyond Macron's ability. He instinctively chose subjects where little concerted action was needed. Thus the majority of his paintings consist of Bacchic and other revelries and amatory conversations. When he does embark on a mythological subject it is apt to resolve itself into solemn processions⁶ or groupings of two figures.⁷ The situation is never studied out psychologically, so to speak. Even in Macron's finest work, the Boston cotyle, where he approaches most nearly a dramatic realization of his theme, he

¹ No. 2292; cf. *Wiener Vorlegeblätter*, Ser. A, pl. 6.

² No. 323; cf. *Wiener Vorlegeblätter*, Ser. C, pl. 4.

³ The same figure occurs also on a cylix in Munich, No. 2655; cf. *Wiener Vorlegeblätter*, Ser. A, pl. 3.

⁴ This figure also occurs on the cylix in the Metropolitan Museum just described.

⁵ Cf. *Archäologische Zeitung*, 1884, pl. 17, 3. The present location of the vase is not known.

⁶ Cf. e.g. *Wiener Vorlegeblätter*, Ser. C, pl. 6 and Ser. A, pl. 5.

⁷ Cf. e.g. *Wiener Vorlegeblätter*, Ser. A, pls. 5 and 8.

does not hesitate to introduce in the midst of a scene of intense emotions a woman daintily holding up a flower in his most approved, conventional style. This inability to vitalize his figures is Macron's great limitation. It is responsible for the lack of vigor in his compositions, for the wooden movements of many of his figures, and for the wearisome repetition of his motives. But he had one great gift, which often makes us forget his limitations—a highly developed sense of beauty. In his best work, such as our cylix with the inscriptions, this shows itself in wonderfully graceful poses and in exquisite line-drawing for his draperies;¹ while even in his less successful paintings his compositions are always well-balanced and harmonious.

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¹ For these qualities cf. especially the Boston cotyle, the Berlin cylix with the judgment of Paris (*Wiener Vorlegeblätter*, Ser. A, 5), the British Museum cotyle with Triptolemus (*Wiener Vorlegeblätter*, Ser. A, 7), and the Berlin cylix with dancing Maenads (*Wiener Vorlegeblätter*, Ser. A, 4), in which almost every figure is a beautiful creation.

A STUDY OF THE WORD ZOANON

A SCIENTIFIC discipline is privileged to reserve for its use a given word in a technical sense, however strikingly at variance, in certain instances, the restricted may be with the common significance of the term. Thus the physicist arbitrarily allots his meaning to words,—as weight, mass, volume, ether, horsepower,—and no one quarrels with him. The archaeologist, therefore, whose method is scientific, should be at liberty to restrict the sense of various terms which he must frequently employ, but it should be essential that, like the physicist, astronomer, biologist, and other professed scientists, he be uniformly consistent in such usage. Patently it should be required that archaeologists, as a class, sanction only one meaning for any one technical term. Unfortunately in archaeology at present there is not this precision of nomenclature, whence comes much confusion which bewilders, if it does not lead astray, novices as well as some adepts. *Zoanon* chances to be in the handbooks of our generation one of these polysignificant words.

I quote from several of the authorities who are much consulted by students: (1) "The primitive wooden figures which served as cult-images were known as *xoana*, meaning 'hewn-objects'" (H. B. Walters, *Art of the Greeks*, p. 70); (2) there are "the upright draped figure, *zoanon* type, the seated Demeter type" etc. (W. H. D. Rouse, *Greek Votive Offerings*, p. 305); (3) "It" (the so-called Hera from Samos, in the Louvre) "exhibits a roundness as remarkable as is the flatness of the Naxian statue from Delos, and has for that reason been supposed to show the influence of wooden statues carved from logs. It may possibly be an imitation in marble of an ancient wooden figure (*zoanon*), but as such figures were probably always clad in real garments, not carved as draped figures, the style of the drapery, at any rate, can hardly show the influence of sculpture in wood" (Fowler and Wheeler, *A Handbook of Greek Archaeology*, p. 201); (4) "It" (the Naxian statue from Delos) "might almost be taken for a pillar or a tree-

trunk, with summary indications of a head, hair, arms, and a girdle. . . . The Greeks called these figures *xoana* (from *xein*, to scrape wood), that is to say, images carved in wood, which seems to have been the material first used for large statues. Another feminine type, the Hera of Samos, . . . is about thirty or forty years later in date" (S. Reinach, *Apollo*, Eng. trans. by Florence Simmonds, p. 38). These definitions, sufficiently various to establish the fact of learned discrepancy in the use of the word, are typical of the several views underlying the current usage of the term in books and periodicals devoted to classical archaeology. It is particularly instructive to note that Dr. Rouse, without explanation, has assumed that the word denotes an *upright draped figure*, a type which he contrasts with the seated draped figure and the standing nude. This assumption, it could be shown, is the most common; those who make it, however, differing in opinion as to whether the Naxian or the Samian figure presents the original *xoanon* type,—most of them agreeing, it should be added, in the theory, tacit or explicit, that the marble figure is a derivative from a more ancient wooden image.

Liddell and Scott in their unabridged Greek-English Lexicon are conspicuously unsatisfactory in their account of the word *ξόανον*. They derive it from *ξέω* and define as follows: "an image carved of wood, Xen. *An.* V, 3, 11; then, generally, an image, statue, especially of a god, Eur. *I. T.* 1359; *Tro.* 525, 1074. (II. a musical instrument, Soph. *Fr.* 228.)" The second division (II), which I have bracketed, I neglect, as having no bearing on the problem in hand. The definition in its first part, where a single reference is adduced (to Xenophon), agrees with that of Dr. Walters quoted above, except that it does not state that a *xoanon* is a *primitive statue serving as cult-image*. The citations in support of the more general meaning of the word, as a synonym of *ἄγαλμα*, etc. are of little value. That from the *Iphigenia in Tauris* (1358-9) reads

τῖνι λόγῳ πορθμέβετε
κλέπτοντες ἐκ γῆς ξόανα καὶ θυπόλους;

The enallage, which is purely poetic, is of course not intended to obscure the immediate reference to the theft by Orestes and Iphigenia of the image of the Tauric goddess. From other

sources it is clear that this image was of wood. The second passage (*Troades*, 525) reads:

τόδ' ἱερὸν ἀνάγχετε ξόανον
Ἰλιάδι Διογενεῖ Κόρη.

Again the image, this time the Trojan Horse, is of wood. Therefore these two references do not alter the earlier definition and do not indicate a more general meaning for the word, like that of *ἄγαλμα*. The last passage cited (*Troades*, 1074), to the effect that Troy's sacred rites, shrines, and statues are of the past, contains the phrase, *χρυσέων τε ξόανων τύποι*. At first sight this seems to be a general term for images, and yet, on consideration, one must say that there is no reason against two arguments destructive of such a theory: (1) that Euripides is here deliberately giving an antique flavor to his words; (2) that these *xoana* of Troy might well have been *wooden images gilded*. Accordingly, Liddell and Scott in their definition actually give no ground for the belief that the word *ξόανον* was ever used except of a *wooden image*. I have treated their account at some length, inasmuch as a young student might naturally suppose that this lexicon would give some aid toward determining Greek usage of this word.

Dr. Frazer, in his *Commentary* on the text of Pausanias (II, pp. 69-70), has an excellent paragraph on the subject. I give, in summary with a few direct quotations, his remarks: The word, derived from *ξύω*, to scrape, smooth, polish, is applicable, according to the statements of ancient Greek lexicographers, to images of wood, stone, or ivory. Strabo applies it to the Phidian chryselephantine Zeus and the Polyclitan chryselephantine Hera, to the marble Nemesis at Rhamnus, and to the Scopasian statue of Apollo Smintheus at Chryse, a work which was almost certainly of marble. Lucian extends it to images of bronze and silver. Clement of Alexandria and also Servius state that it is properly restricted to wooden images. "Pausanias appears to use the word always in this, its restricted, sense (wooden image); at least there are many passages in his work in which the word *must*, and none in which it *may* not, mean a wooden image." Pausanias enumerates the kinds of wood used, mentions *xoana* of olive, *agnus*, and oak, and from wooden figure heads; he opposes *xoana* to stone images and bronze; in speaking of acrolithic

statues, he distinguishes the marble parts from the wooden *xoana*; he mentions a *xoanon* which was said to have floated from Delos to the Peloponnese. "Hence, even when there is nothing in the context to show what the material was, we may always assume that by *xoanon* Pausanias means a wooden image. . . . In some passages it is implied that the *xoana* were of rude archaic character, as we should have expected." He mentions old *xoana* made by Daedalus and gives it as his opinion that in the days of Danaus all images, especially Egyptian statues, were *xoana*. Finally, by Pausanias the word *xoanon* is used of statues of deities, never of those of men.¹

My special study I have confined to the text of Pausanias, who uses the word *ξᾶνον* no less than sixty times. It seems to me reasonable, if a technical definition is to be adopted, to take his,—provided it be demonstrated that he is consistent,—inasmuch as his work is avowedly antiquarian and the word occurs incomparably more often in it than in that of any other ancient writer. Dr. Frazer's whole comment is an admirable general statement, but it cites only a few of the many passages in which the term is used by Pausanias and does not pretend to give the detailed information which may be gleaned from a comparison of all the occurrences. In particular, I have sought to determine whether Pausanias restricts the word to a specific type of wooden image,—as, for example, the standing, as opposed to the seated, or the female, as opposed to the male, or the draped, as opposed to the nude.

For convenience I have grouped the passages from Pausanias,—excluding those which are doubtful or ambiguous,—according to the two tables which follow:

¹ I have not considered it necessary to note here the references to Pausanias which support each of Dr. Frazer's statements. The passages which he cites from other ancient writers are: Hesychius, s. v. *ξᾶνον*; Pollux, *Onom.* I, 7; Strabo, VIII, pp. 353 ff., p. 372; IX, p. 396; XIII, p. 604; Lucian, *De Dea Syria*, 39; *Alex.* 78; Clement Alex., *Protr.* p. 290; Servius, *ad Aen.* II, 225; IV, 56. The modern authorities to whom he refers are: Siebelis, *Paus.* I, pp. xlii ff.; Schubart, 'Die Wörter *ἄγαλμα*, *εἰκὼν*, *ξᾶνον*, *ἀνδριάς*, u. verwandte in ihren verschiedenen Beziehungen, nach Paus.' *Philologus*, XXIV, 1866, pp. 561-587; M. Fränkel, *De verbis potioribus quibus opera statuaria Graeci notabant*, pp. 10-13. It should be noted that Siebelis, in the work cited, quotes in full the passages from Hesychius, etc., on which Dr. Frazer bases his conclusions regarding usage in ancient writers apart from Pausanias.

TABLE A

Xoana mentioned by Pausanias: Classified by Deities, Cult Epithets, and Places

DEITY	CULT EPITHET	PLACE	PAUSANIAS
APHRODITE.	None.	Titane.	II, 11, 8.
"	"	Road from Argos to Mantinea.	II, 25, 1.
"	"	Sparta.	III, 15, 10.
"	"	Mt. Maenalus.	VIII, 37, 12.
"	"	Delos.	IX, 40, 3-4.
"	Nicephorus.	Argos.	II, 19, 6.
"	Area.	Sparta.	III, 17, 5.
"	Urania.	Cythera.	III, 23, 1.
"	Machanitis.	Megalopolis.	VIII, 31, 6.
"	Urania.	Thebes.	IX, 16, 3-4.
"	Pandemus.	"	"
"	Apostrophia.	"	"
APOLLO.	None.	Aegina.	II, 30, 1.
"	"	Aegera.	VII, 26, 6.
"	"	Megalopolis.	VIII, 31, 5.
"	"	Mt. Maenalus.	VIII, 37, 12.
"	"	Tegea.	VIII, 53, 7-8.
"	Pythius.	Megara.	I, 42, 5.
"	Decatephorus.	"	"
"	Archegetes.	"	"
"	Lycius.	Argos.	II, 19, 3.
"	"	"	VIII, 46, 3-4.
"	Thearius.	Troezen.	II, 31, 6.
"	Epidelius.	Cape Malea.	III, 23, 2-4.
"	Amazonius.	Pyrrichus.	III, 25, 3.
"	Carneus.	Leuctra in Laconia.	III, 26, 5.
"	Corynthus.	Corone.	IV, 34, 7.
"	Phallen.	Methymna.	X, 19, 3.
ARES.	None.	Road from Argos to Mantinea.	II, 25, 1.
ARTEMIS.	None.	Cenchreae.	II, 2, 3.
"	"	Argos.	II, 19, 7.
"	"	Orneae.	II, 25, 6.
"	"	Aegina.	II, 30, 1.
"	Taurica.	Brauron.	I, 23, 7; 33, 1.
"	Ephesia.	Corinth.	II, 2, 6.
"	Pheraea.	Sicyon.	II, 10, 7.
"	Orthia.	Sparta.	III, 16, 7-11.
"	"	"	(Cf. VIII, 20, 8; 46, 3; I, 23, 7; 33, 1.)
"	Astratea.	Pyrrichus.	III, 25, 3.
"	Cedreatis.	Orchomenus in Arcadia.	VIII, 13, 2.
"	Stymphalia.	Stymphalus.	VIII, 22, 7.
ASCLEPIUS.	Agnitas.	Sparta.	III, 14, 7.
ATHENA.	None.	Titane.	II, 12, 1.
"	"	Lessa.	II, 25, 10.
"	"	Mt. Maenalus.	VIII, 37, 12.
"	"	Cnossus.	IX, 40, 3.
"	"	Daulis.	X, 4, 9.
"	"	Painting in Lesche, Delphi.	X, 26, 3.

DEITY	CULT EPITHET	PLACE	PAUSANIAS
ATHENA.	Chalinitis.	Corinth.	II, 4, 1.
"	Cissaea.	Epidaurus.	II, 29, 1.
"	Sthenias.	Troezen.	II, 32, 5.
"	Alea.	Road from Amyclae to Therapne	III, 19, 7.
"	Area.	Plataea.	IX, 4, 1.
AUXESIA.	None.	Aegina.	II, 30, 4.
BRITOMARTIS.	None.	Olous in Crete.	IX, 40, 3.
CHARITES.	None.	Elis.	VI, 24, 6.
CORA.	None.	Mt. Taygetus.	III, 20, 7.
CORONIS.	None.	Titane.	II, 11, 7.
DAMIA.	None.	Aegina.	II, 30, 4.
DEMETER.	Black.	Phigalia.	VIII, 5, 8. VIII, 42, 3-13.
DIONYSUS.	None.	(1) Eleutherae, (2) Athens, (1) a copy of (2).	I, 38, 8.
"	"	Megara.	I, 43, 5.
"	"	Titane.	II, 11, 8.
"	"	Argos.	II, 23, 1.
"	"	Aegina.	II, 30, 1.
"	Lysius.	Corinth.	II, 2, 6-7.
"	Bacchius.	"	"
"	Saotes.	Lerna.	II, 37, 2.
DIOSCURI.	None.	Sicyon.	II, 7, 5.
"	"	Troezen.	II, 31, 6.
"	"	" (outside city).	II, 36, 6.
EILEITHYIA.	None.	Athens (2 <i>xoana</i>).	I, 18, 5.
"	"	Aegium.	VII, 23, 5-6.
ENYALIUS.	None.	Sparta.	III, 15, 7.
EURYNOME (probably Ar- temis).	None.	Phigalia.	VIII, 41, 4-6.
GE.	Eurysternus.	Crathis.	VII, 25, 13.
HECATE.	None.	Titane.	II, 11, 8.
"	"	Aegina.	II, 30, 2.
HERA.	None.	Megalopolis.	VIII, 31, 5.
"	"	Argos.	VIII, 46, 3.
"	Aphrodite.	Sparta.	III, 13, 8-9.
"	Nympheuomene.	Plataea (<i>Xoana</i> called <i>Daedala</i> used in rites of Hera).	IX, 2, 7 ff.
HERACLES.	None.	Corinth.	II, 4, 5.
"	"	Sicyon.	II, 10, 1.
"	"	"	VII, 26, 6.
"	"	Borders of Messenia and Arcadia.	VIII, 35, 2.
"	"	Thebes.	IX, 11, 4-5; 40, 3.
HERMES.	None.	Argos.	II, 19, 6.
"	Cyllenius.	Cyllene.	VIII, 17, 2.
MOTHER OF THE GODS.	None.	Titane.	II, 11, 8.

DEITY	CULT EPITHET	PLACE	PAUSANIAS
MUSES.	None.	Megalopolis.	VIII, 31, 5.
NEMESIS.	None.	Rhamnus.	I, 33, 7.
NIKE.	Apteros.	Athens.	III, 15, 7. V, 26, 6.
"	"	Olympia, imitation of Athens.	V, 26, 6.
ORPHEUS.	None.	Mt. Taygetus.	III, 20, 5.
PAN.	None.	Psytalia.	I, 36, 2.
THETIS.	None.	Sparta.	III, 14, 4-5.
TROPHONIUS.	None.	Lebadea.	IX, 40, 3. Cf. IX, 39 ff.
TYCHE.	None.	Sicyon.	II, 7, 5.
"	"	Titane.	II, 11, 8.
"	"	Elis.	VI, 25, 4.
ZEUS.	None.	Argos.	II, 19, 7.
"	Herceus (on the Acropolis).	Argos.	II, 24, 3. VII, 46, 2.

TABLE B

Xoana mentioned by Pausanias: Classified by Descriptive Terms.

I. *Xoana* contrasted with Marble and Metal Images:

1. With Marble: II, 10, 7; 11, 8; 37, 2; VII, 23, 5-6; VIII, 37, 12; 53, 7-8; IX, 11, 4.

2. With Bronze: IV, 34, 7; VIII, 42, 7 (implicit); X, 19, 3.

In II, 11, 6, where Pausanias states that he is uncertain whether images named are of wood or metal, it is noteworthy that he does not use the word, *Xoanon*.

II. Acrolithic *Xoana* (ξύκονα πλὴν προσώπου τε καὶ χειρῶν ἑκῶν καὶ ποδῶν, ταῦτα δὲ λίθου):

II, 4, 1; VI, 24, 6; 25, 4; VII, 23, 5; VIII, 31, 6; IX, 4, 1.

Pausanias' definition of acrolithic *xoana* postulates a contrast between the stone and other portions of the *xoanon*.

III. Gilded *Xoana*:

II, 2, 6-7 (Two *Xoana*; all but faces gilded; these smeared with red); VI, 24, 6 (Drapery of *Xoana* of Charites gilded); VI, 25, 4 (All but head, hands, and feet gilded); VIII, 22, 7 (Greater part of *Xoanon*); VIII, 53, 7-8; IX, 4, 1 (All but head, hands, and feet gilded).

IV. Large *Xoana*:

VI, 25, 4; VII, 26, 6; VIII, 17, 2 (8 ft. high); IX, 4, 1 (By comparison with Athena Promachos of Phidias).

V. Small *Xoana*:

III, 16, 10-11 (Artemis Orthia); IX, 40, 3-4 (Delian Aphrodite); X, 26, 3 (Palladium held by Cassandra, painting in Lesche, Delphi).

VI. Seated Type:

II, 37, 2 (Dionysus Saotes); VIII, 13, 2 (Artemis Cedreatis, — ἑστῶτα ἐν κλισίᾳ μεγάλῃ); VIII, 42, 4 (Black Demeter at Phigalia).

VII. Standing Type:

II, 25, 6 (Artemis at Orneae); III, 16, 10-11 (Artemis Orthia at Sparta; the epithet probably means "standing"; at any rate the type, which seems to have been the same as that of the Taurica, is shown by vases representing the theft of the Tauric image by Orestes and Iphigenia to have been standing).

VIII. Nude Type:

- II, 4, 5 (Heracles); II, 30, 1 (Apollo); VII, 26, 6 (*Xoanon* of Apollo and evidently also one of Heracles).

IX. Draped Type (i.e. carved drapery):

- II, 30, 1 (Artemis and Dionysus); VI, 24, 6 (Charites); VIII, 42, 4 (Black Demeter at Phigalia).

X. *Xoana* Draped in Actual Garment of Stuff:

- I, 18, 5 (Eileithyia); VII, 23, 5-6 (Eileithyia).

Pausanias notes in the first passage that only with Athenians was it customary to cover statues of Eileithyia, but the second passage records evidently the same custom at Aegium.

In I, 43, 5, Pausanias seems to be speaking of a garment which concealed all but the face of a *Xoanon* of Dionysus at Megara. In II, 11, 6, he speaks of garments thrown over the image of Asclepius, but in this instance he is not sure whether the statue is of wood or metal. See above, I. The custom of draping an image is strongly suggested in the account of the origin of the festival of the *Daedala* in honor of Hera Nympheuomene at Plataea, IX, 2, 7-3, 9.

XI. Artists Named:

- II, 30, 2 (Myron); 31, 6 (Hermion of Troezen, evidently an early artist); 32, 5 (Callon); V, 26, 6 (Calamis, an imitation); VII, 23, 6 and VIII, 31, 6 (Damophon of Messene); VII, 26, 6 and II, 10, 1 (Laphaes, a Phliasian, an early artist); VIII, 53, 8 (Chiriosophus, early).

For Daedalus see below, XVI.

In VIII, 42, 3-13, Onatas is named as the sculptor of a bronze copy of the *Xoanon* of the Black Demeter. Later Damophon copied the statue by Onatas.

XII. Instances of Characterization of the Cult Attributes, Accessories, Peculiarities of Pose, etc., of *Xoana*:

- II, 30, 1 (Bearded Dionysus); II, 24, 3 and VIII, 46, 2 (Three-eyed Zeus of Priam, Herceus); III, 15, 7 (Enyalios in Fetters); III, 15, 10, and 23, 1 (Armed Aphrodite); III, 26, 5 (Apollo Carneus at Leuctra in Laconia, after type of Carneus at Sparta); VI, 24, 6 (Charites with Attributes); VII, 23, 6 (Eileithyia with Torches); VIII, 41, 5-6 (Eurynome represented as a mermaid in fetters); 42, 3-13 (Horse-Headed Black Demeter, with Attributes).

XIII. Passages which furnish no Description:

- II, 7, 5; 36, 6; III, 19, 7.

XIV. Miscellaneous:

- I, 36, 6 (*ὅς σὺν τέχνῃ*); VIII, 42, 3-13 (Reverse of above, but the description does not apply to the original *Xoanon*); II, 30, 1 (*τέχνη τῇ ἐπιχωρίῳ*, Troezen); IX, 40, 3 (*Xoanon* terminating in *τετραγώνου σχῆμα*).

XV. Woods Used:

- VIII, 17, 2 (See below, p. 20); I, 42, 5 (Ebony); IX, 3, 4 (Oak); II, 30, 4 and X, 19, 3, (Olive); III, 14, 7 (Willow).
II, 2, 6-7 (Two *Xoana* of Dionysus made from the tree on which Pentheus was slain); IX, 16, 3-4 (From the *ἀροστολία* of the ships of Cadmus).

XVI. *Xoana* venerable by reason of Antiquity, Association with Heroic Legend, Connection with Unusual Rites, or otherwise noteworthy:

- I, 23, 7 and 33, 1 (Artemis Taurica, Athens and Brauron); 33, 7 (*ἀγώτατος*); 38, 8 (Imported, *τὸ ἀρχαῖον*); 43, 5 (Dedicated by Polyidus of Megara); II, 2, 3 (*ἀρχαῖον*); 2, 6-7 (Associated with Pentheus); 4, 1 (Associated with Bellerophon); 4, 5 (Work of Daedalus); 10, 1 (*ἀρχαῖον*); 10, 7 (Imported to Sicyon from Phrae); 19, 3 (Dedicated by Danaus); 19, 6 (Two *Xoana*; one the work of Epheus, other dedicated by Hypermetra); 19, 7 (Dedicated by Danaus); 23, 1; 24,

3, and VIII, 46, 2 (Associated with Trojan Legend); II, 25, 1 (Dedicated by Polynices and the Argives); 29, 1 (*θλας ἄγων*); 30, 4 (Damia and Auxesia, peculiar cult; Cf. Herodotus, V, 82-83); 37, 2 (Dedicated by the Danaides); III, 13, 8-9 (*ἀρχαίων*; associated with epichoric marriage rites); 14, 4-5 (*Xoanon* miraculously discovered; kept in secret); 15, 7 (*ἀρχαίων*); 16, 11 (Artemis Orthia at Sparta; peculiar rites); 17, 5 (Among most ancient memorials in Greece); 20, 5 (Work of the Pelasgians); 23, 1 (In shrine, most holy and ancient); 25, 3 (Dedicated by the Amazons); IV, 34, 7 (In very ancient shrine); VII, 20, 8 (Unusual rites); 25, 13 (Very ancient); 26, 6 (*ἀρχαίων*); VIII, 22, 7 (In ancient shrine); 31, 5 (*ἀρχαίων*); 35, 2 (Work of Daedalus); 41, 5-6 (*Xoanon* of Eurynome, displayed only once a year); 42, 3-13 and 5, 8 (Black Demeter); IX, 4, 1 (From the spoils of Marathon); 11, 4-5 (Work and dedication of Daedalus); 16, 3-4 (Dedicated by Harmonia); 40, 3 (Work of Daedalus and dedication of Ariadne); X, 4, 9 (Imported by Procne from Athens to Daulis); 19, 3 (*Xoanon* miraculously recovered from sea).

As a rather striking *prolegomenon* to the conclusions which may be drawn from these charts, it should be remarked that there are only three passages (catalogued under Table B, XIII) which are negligible in that they give no descriptive comment. I draw from the tables these inferences:

From Table A: Pausanias uses the word *xoanon* only of statues of divinities, male or female. The only instance where the *xoanon* may not strictly be interpreted as a cult-image is to be found in the passage on the Feast of the *Daedala* at Plataea (IX, 2, 7 ff.). On this occasion a number of *xoana*, called *daedala*, were consumed by the sacrificial fire in honor of Hera Nymphaeomene.

From Table B: (1) A *xoanon* is not of marble or metal; (2) it may be acrolithic; (3) it may be gilded, entirely or in part; (4) it may be large or small; (5) it may be seated or standing; (6) it may be nude or draped (i.e., drapery plastically represented); (7) it may be clad in a real garment of stuff; (8) it may be represented with various attributes and accessories; (9) the artists named are, except in one instance where Myron is mentioned, either early sculptors who carved ancient *xoana* or later sculptors who made copies of ancient *xoana*; (10) it was customary to use certain kinds of wood for *xoana*; (11) *xoana* were peculiarly venerable, often dating from a remote antiquity, and likewise often connected with heroic legend or mysterious and unusual rites.

To put it more concisely, Pausanias meant by the word *an ancient wooden statue of a deity, male or female*, carved after any type desired, i.e., standing, seated, draped, or nude. It was by no means essential that a *xoanon* be clad in real garments.

The word *xoanon* is not the only term by which Pausanias designates images of wood. In fifteen passages, noted in the index to the Teubner text of Pausanias,¹ the phrase ξύλον ἄγαλμα is used, a mode of speech which is clearly a variant for the single word *xoanon*. For instance, in one passage (X, 19, 3) he uses the two terms of the same image; in another (VIII, 37, 12) his remarks show that the two undoubtedly are identical in meaning; and two more passages (IX, 3, 1; 16, 3) definitely support this statement. I mention the point in passing, not because it is of importance, but as a precaution against possible misunderstandings, and it is to be observed that for tabulation I have, in conservative fashion, chosen only the passages where the word *xoanon* occurs.

It seems appropriate here, at the end of the formal study of the tables, to state more general conclusions by correlating the evidence which I have gathered with that quoted above from Dr. Frazer. The word *xoanon*, then, at first restricted to images of wood, grew at length to have a meaning synonymous with ἄγαλμα, εἰκὼν, etc., although Pausanias consistently confines it to archaic or archaistic wooden statues of deities. I have been unable to find any support for the rather popular theory that the term applies specifically to statues either of columnar or board type, and I am inclined to believe that this assumption has rested on the idea that images carved from tree-trunks, shorter logs, and planks must have been the earliest plastic types in Greece. Ancient Greek usage certainly furnishes no ground for assigning the term *xoanon-type* to the Hera of Samos or the Naxian statue from Delos and denying the appellation to other archaic types, as, for example, the seated "Athena" from the Acropolis at Athens and the primitive "Apollo" figures. In so far as one sees in any of these early types a rendering which may be supposed to give in stone an idea of the older wooden image,—the hypothetical prototype,—one might, I should say, designate it as belonging to the *xoanon-type*. However little a gathering together of evidence from Pausanias may ultimately modify archaeological nomenclature in this particular, it seems to me that it shows conclusively that among the early wooden statues of which he speaks,—*xoana*, as he calls them,—the male is as well known as the female type, while, as I have indicated above, there was variety

¹ For an ἄγαλμα of a specific kind of wood, see Paus. V, 13, 7. Cf. also VII, 22, 9; I, 27, 1; VIII, 23, 1.

in the matter of cult-attributes and general accessories and the nude *xoanon* had its place as well as the draped. I have, it must likewise be remarked, found no reason for believing that it was a common custom to hang garments,—i.e., real drapery of stuff,—on *xoana*. There are, as Table B indicates, only two instances where Pausanias definitely records such practice in regard to images which he names *xoana*. It is noteworthy that in each case the deity whose statue is so draped is Eileithyia and that Pausanias makes the comment (I, 18, 5) that it is a convention only with the Athenians to hang garments on *xoana* of Eileithyia, although by citing the same custom in relation to a *xoanon* of this goddess at Aegium,—the second of the two passages,—he clearly contradicts his own theory of local tradition. Undoubtedly we should infer from his account that there was this practice at the feast of the *Daedala* in honor of Hera Nymphneuomene at Plataea, as the legend explanatory of the rites told of a wooden image wrapped in garments to simulate a mortal bride of Zeus. The cult epithet suggests to me that the deity of the festival was similar to Eileithyia. Thus it would appear that the swathing of *xoana* in garments had ritual significance.¹ At any rate the practice, as far as Pausanias' testimony is concerned, is clearly not essentially concerned with *xoana* as such.

That there existed various types of wooden images in early Greek sculpture must, of course, mean that the material was freely used as a plastic medium in the archaic period. I incline to the opinion that it was the fashion to carve these then, not so much because the days of "Baumkultus" were not far away, but rather because artists, however crude their technique, had somehow inherited,—presumably by way of Crete,—the Egyptian tradition which, it is needless to say, gave conspicuous place to wood as a material for the work of sculptors. I even hazard the conjecture that the striking absence of sculpture among the remains of the otherwise richly artistic Minoan and Mycenaean civilizations is explicable by the simple fact that the soil of the lands where these cultures flourished does not have that miracu-

¹ Possibly the custom of dedicating garments at the Brauronia shrine on the Acropolis at Athens tends to assign Artemis Brauronia to the cult-type of Artemis Eileithyia. Pausanias calls the image of the Brauronia a *xoanon*, but he does not say that it was hung with garments. I have not discussed the two uncertain passages, recorded in Table B, where there is possibly reference to *xoana* draped in actual garments, one of Dionysus, the other of Asclepius.

lous property of preserving wood possessed by the earth of Egypt. Certainly the wooden images which Pausanias saw in Greece in the second century of our era have vanished.

Several items in the texts of Pausanias which have been cited group themselves to support such a theory,—that is, that streams of influence from Egypt and Crete contributed to the development of Greek sculpture in wood. Speaking of a *zoanon* which Daedalus had dedicated as the cult-image in the shrine of Apollo Lycius at Argos, he says (II, 19, 3): *ξόανα γὰρ δὴ τότε εἶναι πείθομαι πάντα καὶ μάλιστα τὰ Αἰγύπτια*. Daedalus, in several other passages named as the author of *zoana*, receives in particular these comments: (VIII, 53, 8) *ἡ δὲ διαίτα ἡ ἐν Κνωσσῷ Δαιδάλω παρὰ Μίνω συμβᾶσα ἐπὶ μακρότερον δόξαν τοῖς Κρησὶ καὶ ἐπὶ ξοάνων ποιήσει παρυσκέυασε*; (II, 4, 5) *Δαίδαλος δέ, ὅποσα εἰργάσατο, ἀτοπώτερα μὲν ἐστὶν ἐ: τὴν ὄψιν, ἐπιπρέπει δὲ ὅμως τι καὶ ἔνθεον τούτοις*. To Pausanias Daedalus is more clearly a real personality than he is to modern scholars, and yet our Greek commentator is not lacking in the acumen of our own sceptical generation when he divines (IX, 3, 2) that *Δαίδαλος*, the son of Palamaon, must have received his name from the *zoana* which he wrought and which *οἱ πάλαι* called *δαίδαλα*. He speaks (VIII, 53, 7-8) of another Cretan artist of early times whose name, Chiriosophus, appears also to be symbolic of his trade. It would be valuable to know what were the distinguishing marks of the two types of *zoana* which he discriminates, the Egyptian and the Aeginetan (I, 42, 5). Since he feels that Egyptian *zoana* were the prevalent statues of very ancient days (II, 19, 3), it is not unreasonable to suppose that the Aeginetan was a derived type. Of the Aeginetan artist Callon, whom he mentions as the sculptor of a *zoanon* of Athena Sthenias at Troezen, he gives the artistic genealogy (II, 32, 5), stating that he was a pupil of Tec-taeus and Angelion, who in their turn learned their trade from Dipoenus and Scyllis. These last belong to the pre-archaic, or semi-mythical, Cretan "schools." There is, as all authorities on the history of Greek sculpture show, a good deal of evidence that Crete was an early centre in the development of plastic art, a fact the more remarkable since the island was in later Hellenic times a backwater of civilization, which had no part to play in the growth of Greek genius. In the light of the recent amazing discoveries in Crete and the patent fact of intercourse between Egypt and the "Minoan" kingdom, it does not seem bold to assume that there is truth in the traditions of Cretan

and Egyptian influence on Greek art. It is only just to add that, of course, it is not impossible that, while pre-historic Crete affected Greek art in many ways, in the matter of sculpture some religious scruple,—comparable to that which has been inhibitive among the members of the Eastern Church, and, to a still greater degree, among the Hebrews and Mohammedans,—may have operated to prevent the "Minoans" from essaying artistic work in that field. Their frescoes and other extant forms of art, however, do not, it must be said, suggest the presence of a force hampering free artistic expression in any form. It is tempting on all accounts to take this step mentally between the wooden images of Egypt and those of Greece. Possibly we may infer that Aegina modified the Cretan-Egyptian stimulus by another current of influence, either indigenous or sprung from Babylonian tradition. Indubitably Aegina in the early historic Greek period had a vigorous "school" of sculpture. These conjectures regarding the origin of wood-technique are all that properly have place in a bald paper which counts texts. I cannot refrain from stating the opinion, nevertheless, that students of classical antiquity are strangely afraid to attempt the interpretation of Greek legends in the light of the discoveries of excavators on pre-Hellenic sites in Greek lands. Even erroneous inferences sometimes prove enfranchising.¹

I have reserved for full quotation Pausanias' interesting passage on the kinds of wood of which *xoana* were ordinarily made: τοῖς δὲ ἀνθρώποις τὸ ἀρχαῖον, ὅποσα καὶ ἡμεῖς καταμαθεῖν ἐδυνήθημεν, τοσάδε ἦν ἀφ' ὧν τὰ ξόανα ἐποιοῦντο, ἕβενος, κυπάρισσος, αἱ κέδροι, τὰ δρύινα, ἡ μῖλαξ, ὁ λωτός· τῷ δὲ Ἑρμῇ τῷ Κυλληνίῳ τούτων μὲν ἀπὸ οὐδενός, θύου δὲ πεποιημένον τὸ ἀγαλμά ἐστιν (VIII, 17, 2). It is odd that he does not here include willow (ἄγνος, λόγος, etc.) and olive, which he names in specific instances as materials for *xoana* (Table B, XV). The Cadmean *acrostolia* and the Pentheus-tree are, naturally, outside the common range of classification.

Finally, it may be instructive for future study to state the names of the deities of whom respectively Pausanias mentions

¹ I have felt that I should be transgressing the limits of this present study if I were to state a chain of reasoning instituted in my mind by Pausanias' mention of a *xoanon* which terminated in a pillar, τετράγωνον σχῆμα (IX, 40, 3). It is debatable whether he means a herm entirely of wood or an image wherein a wooden torso was directly joined to a stone basis. Another passage (II, 19, 7) may have some bearing on this point.

more than three *zoana*. The list, arranged according to a descending scale based on these numerical instances, is this: Apollo, Aphrodite, Artemis, Athena, Dionysus, Hera, Heracles. The numbers may easily be reckoned by reference to Table A. This evidence may at some time become peculiarly significant in a study of early Greek religion or of early Greek plastic types.

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THE ALEXANDRIAN ORIGIN OF THE CHAIR OF MAXIMIANUS

THERE is preserved today in the sacristy of the Cathedral at Ravenna an ivory chair that is usually associated with Maximianus who occupied the episcopal seat of Ravenna from 546—553 A.D. The ivory panels on the front of the Chair, carved with the figures of the four Apostles and the Baptist, as well as those depicting the life of Joseph and the scenes from the New Testament on the back and sides, require no description for students of Early Christian art. No more important monument of this art exists, and none has occasioned more divergent theories as to its place of origin. While the Chair is the most pretentious piece of Early Christian ivory-carving that remains today and one of the most artistic products of an inartistic period, its importance is archaeological rather than aesthetic. Numerous ivories of the same period are related to it and point to the existence of a school of ivory carvers of which this Chair is the chief product. Once its provenience is established, not only is the origin of these other ivories proved and one school of Christian art defined, but a better foundation is laid for the reconstruction of the numerous other schools that flourished about the close of the sixth century. What then was the school of which the so-called *cathedra* of Maximianus is the finest product?

While the archaeologists have agreed on the sixth century as the date of execution, they have failed to find any common ground for its place of origin. In this article I propose to discuss only the origin of the Chair and not its subsequent history. Whether it actually belonged to Bishop Maximianus of Ravenna as the monogram on the front has suggested, whether it was brought to Ravenna in 1001 A.D. as a present from Doge Pietro Orseolo to Emperor Otto III, or whether it, instead of the chair at Grado, is the one that Heraclius obtained at Alexandria and gave to the patriarch at Grado, are questions that must be omitted. It is apparent on reviewing the various artistic centres to

which the Chair has been attributed, that such questions have thrown no light on its origin nor influenced the attributions.

About fifty years ago Labarte claimed that it was commenced at Constantinople and finished at Ravenna by Greek artists. Its origin in Ravenna has been supported by Stuhlfauth, while Venturi, without denying its Byzantine origin, prefers to consider it a work analogous to the (problematic) mosaics of Santa Maria Maggiore at Rome. Of recent years Strzygowski, who has written most voluminously on the subject, has attributed it to Antioch. The majority of modern writers on the Chair, however, including Ainaloff, Diehl, Leclercq, Graeven, and Dütschke, have supported an Alexandrian origin. Dalton, on the other hand, in a résumé of both theories leaves the choice open between Alexandria and Antioch.¹

This divergence of opinion is mainly due to the fact that the greater part of the evidence advanced in support of either the Alexandrian or the Antiochian origin has been based upon the style and decoration. Neither offers very conclusive grounds for attribution. Toward the latter part of the sixth century when the classical traditions in Christian art were beginning to break down, and when in Constantinople, Asia Minor, Syria, Palestine, and especially Egypt, local and distinguishable schools were developing, the Hellenistic style and ornament that still remained were very similar in the different schools. In iconography, however, the distinctive features of these Eastern Christian schools of art were to a large extent established as early as the sixth century. It is, therefore, on iconographical grounds that I would attempt to show the Alexandrian origin of the Chair of Maximianus.

Other ivories, as I have pointed out, enter into the discussion of the provenience of the *cathedra*. Of these the ivory book-covers of the Etschmiadzin Gospels² and the covers of manuscript *Lat.* 9384 in the Bibliothèque Nationale at Paris³ are the most important. The analogies in style and iconography which exist between these ivories and those of the Chair have proved baffling to those students of Early Christian art who have accepted the

¹ The principal references are summarized by Dalton, *Byzantine Art and Archaeology*, pp. 204-207, and by Leclercq in Cabrol, *Dictionnaire d'archéologie chrétienne et de liturgie*, s.v. 'Chaire épiscopale,' col. 59.

² Strzygowski, *Byzantinische Denkmäler*, I, pl. I.

³ Garrucci, *Storia*, VI, pl. 458.

Alexandrian origin of the Chair, and at the same time have accepted the usual attribution of the Etschmiadzin covers either to Ravenna or Syria.¹ The evidence for the attribution to Ravenna, however, rests on the doubtful assumption that the Chair of Maximianus was in that city by the middle of the sixth century, while the Syrian attribution is founded on the connection of the Chair with Antioch. So by throwing open the discussion of the origin of the *cathedra*, the book-covers are freed of any Italian or Syrian ties, and we have only their evident relation to the ivories of the Chair to keep in mind.

In the sixth century when the Chair was carved, Alexandria was beginning to lose its importance as a preëminent centre of Christianity in Egypt. After the nationalistic reaction of the fifth century, art tended more and more to pass from the great Hellenistic city to the monasteries of Upper Egypt, where it took on racial and indigenous characteristics; instead of preserving the Hellenistic style, especially in the naturalistic rendering of the human figure, it sank to a crude frontality and a conventional formalism of types. This Coptic art of Egypt, which flourished in the late sixth and the seventh century, had in the matter of iconography, and even of style, two sources,—one a Syro-Palestinian entering the country by the hands of pilgrims and monks returning from the Holy Land, and the other Alexandrian. While the classical style, passing inland from Alexandria, rapidly broke down, it is natural that many iconographic types, which must have originated in that great Eastern centre of Patristic theology, should have been adopted by the crude, unimaginative, and stylistic Coptic art. Although there are almost no sure examples of Alexandrian art of the sixth century with which to compare the Chair of Maximianus, a proof of origin emerges from the fact that all the types of the New Testament scenes on the Chair are continued in the seventh century on Coptic monuments, for many of these types are peculiar to Egyptian examples and, in the case of the Nativity, the iconography is of Egyptian origin and significance.

The Alexandrian-Coptic version of the *Nativity* which occurs on the Chair (Fig. 1) is characterized by the introduction of the doubting mid-wife, Salome, into what would otherwise be a general Oriental type, in which the Virgin lies on a mattress instead of being seated in a chair as in Western Nativities. The

¹ Dalton, *op. cit.* p. 208; Strzygowski, *op. cit.* pp. 25-53.

relation of this version with Salome to the Coptic art of Egypt is demonstrated by the certainly Coptic origin of the majority of the monuments on which it occurs, by the Coptic origin of Salome in the apocryphal literature of the country, and by the moral and religious concepts of the Copts, which required the introduction of Salome into the scene to prove the absolute, wholly divine nature of the Saviour.

The Coptic monuments on which this type appears are: a fragment of the Murano book-covers in Manchester,¹ an ivory in the British Museum (Fig. 2), a pyxis in Vienne,² another in the Berlin Museum,³ and a third in Werden.⁴ In a fresco of Bawît, dating from the sixth or seventh century, there is a remarkable representation of the Nativity which omits Joseph and the Christ-child, but introduces Salome, as the inscriptions prove.⁵ These examples, with the exception of a suspiciously mixed



FIGURE 1.—THE NATIVITY, CHAIR OF MAXIMIANUS. (After Molinier)

¹ Dalton, *op. cit.* fig. 114.

² Kehrer, *Die Heiligen Drei Könige in Literatur und Kunst*, II, figs. 38-41.

³ Garrucci, *op. cit.* VI, pl. 437, 4.

⁴ Garrucci, *op. cit.* VI, pl. 438, 1.

⁵ Clédât, *C. R. Acad. Insc.* 1904, pp. 517-527, fig. 4.

version of the scene on the columns of San Marco in Venice,¹ whose place of origin is unknown and whose date is open to question, and the Grimaldi drawing of the frescoes in the chapel of John VII at Rome,² complete the list of this odd type in Early Christian art. The first reason, then, for connecting the



FIGURE 2.—COPTIC IVORY IN THE BRITISH MUSEUM. (After Dalton)

type with Egypt is its appearance in the Bawlt fresco, and in the above mentioned ivories, which, with the exception of the Chair of Maximianus, are universally admitted, from their style and decoration, to be Coptic monuments.³

With reference to the Coptic origin of the legend of Salome, —Reveillout has found some Coptic fragments belonging to the apocryphal *Gospel of the Twelve Apostles*, which prove that this detail originated in Egypt.⁴ In both the Protevangelium of James and the Gospel of Pseudo-Matthew, which goes back to a Hebrew source, Salome is only briefly mentioned in

¹ Venturi, *Storia dell'Arte Italiana*, I, fig. 221.

² Garrucci, *op. cit.* IV, pls. 279, 280, 281. Another eighth century example occurs in the cemetery of St. Valentinus (Garrucci, II, pl. 84).

³ Strzygowski, *Hellenistische und Koptische Kunst in Alexandria*, p. 86 ff.; Dalton, *op. cit.* p. 209.

⁴ Reveillout, *J. Asiat.* 1905, 'La sage-femme Salomé,' pp. 408 ff.

connection with the Nativity. In the *Gospel of the Twelve Apostles*, on the other hand, her importance in Coptic eyes is shown by the detailed account of her life from the time when she first sold herself for money, through her participation in the Nativity, to her conversion by Simeon. Reveillout, commenting on the Bawlt frescoes, shows that all the scenes in this monastery dealing with the early life of the Virgin represent a unique tradition drawn from the *Coptic Gospel of the Twelve Apostles*. When one considers the minute and detailed emphasis laid upon the none too pleasant story in the Coptic Gospel in connection with the extraordinary significance given to Salome in the Bawlt Nativity, where the Child is unborn and Salome wears a square nimbus, it is clear that the doubting Salome is an addition to the scene which we owe to Egypt.

The motive of Salome is, moreover, perfectly consistent with the moral and religious ideas of the Copts. The Coptic mind required the presence of the doubting mid-wife in the scene by reason of its fundamentally carnal character. The introduction of Salome into the Nativity simply expressed the doubt which prevented the Copt from accepting the divinity of the Saviour until it was dispelled. In other words, to the degree that they were themselves material, they naturally demanded that their divinity be absolutely spiritual, partaking of no polluting material attributes. For this reason they were Monophysites, upholding the purely spiritual nature of Christ's birth. The doubting Salome, then, affords a very obvious, however vulgar, means of demonstrating the immaculate birth of the Saviour, especially important to them in their struggle against the orthodox view of Christ's double nature.

While I believe that this scene alone offers conclusive evidence for the Egyptian origin of the Chair of Maximianus, the other scenes bear out the attribution. Without reviewing all the scenes on the Chair, which, with no exception, appear on subsequent Coptic monuments, a brief discussion of the more striking examples will make the relation of the ivories with Egypt evident. The *Annunciation*,¹ as it occurs on the Chair of Maximianus, the ivory book-covers of the Etschmiadzin Gospels, and the book-covers in the Bibliothèque Nationale, depicts the angel accosting the Virgin who sits at the left in a wicker chair, spinning the

¹ The iconography of the Chair is best illustrated in Garrucci, *op. cit.* VI, pls. 414-422.

purple garment for the temple. All these examples are nearly identical, and the Virgin, with her spinning, seated in a high-backed, round-topped, wicker chair is the distinguishing feature of the type. This type with the exception of the examples already cited, occurs only on monuments the Coptic origin of which is assured. In other words, the iconography of the *Annunciation*, as of the Nativity, passed into the indigenous art of the Thebaid.

The Coptic monuments which continue the type are a fragment of the Murano book-covers in the Stroganoff Collection,¹ an ivory plaque in the Uwaroff Collection,² a medallion from Egypt in the von Gans Collection,³ a Coptic fabric in the Victoria and Albert Museum,⁴ and a fresco at Bawlt.⁵ The ornament, style, and technique, as well as the iconography, of these examples are Coptic. On all, save the von Gans medallion, the angel carries a cross instead of a flowering wand. The presence of the cross, either borne by angels, or by the Saviour in representations of miracles is an Egyptian feature. While there is no space in this article for proof of this assertion, if anyone who is interested will examine the Early Christian monuments with this in mind, and note the occurrence of the cross on Egyptian frescoes and minor objects from Alexandria, Achmim, Bawlt, and other similar sites, I am certain that he will find that all the examples, where Christ or angels are represented as miraculous agents carrying a cross, are either Egyptian, or may be attributed to Egypt, or show Egyptian influence. Comparing the *Annunciation* with the Syrian and Palestinian examples, one finds on the Monza phials,⁶ the miniatures of the Etschmiadzin Gospels, the Rabula Gospels,⁷ and the Syrian Gospels (Syr. 33, Bibl. Nat.), that the Virgin stands as the angel of the Lord accosts her, that the odd wicker chair seen on the Chair of Maximianus does not occur, and that both the Virgin and the angel wear the nimbus.

The Test of the Virgin by Water, which appears on the Chair of Maximianus and the two book-covers, is a rare scene in Early Christian art and, save for these examples, occurs only on the

¹ Graeven, *Elfenbeinwerke in Italien*, No. 64.

² Strzygowski, *Byz. Denk.* I, p. 43.

³ *Ber. Kunsts.* XXXV, 1913, No. 3, figs. 4-7.

⁴ Dalton, *op. cit.* fig. 381.

⁵ Clédat, *C. R. Acad. Insc.* 1904, p. 225.

⁶ Garrucci, *op. cit.* VI, pl. 433, 8.

⁷ Garrucci, *op. cit.* III, pl. 130, 1.

Uwaroff ivory and the fragment of the Murano covers in the Stroganoff Collection, both of which are Coptic products. The scene of *Joseph Assured by an Angel*, while it occurs on an ivory casket in the Victoria and Albert Museum, which I have attributed to Provence,¹ and on a sarcophagus of Le Puy,² was an even rarer scene than the Test by Water in Christian art. The only other example, known to me, is a representation in a fresco at Antinoë in Egypt, which is strikingly analogous to the representation on the Chair.³ *The Journey to Bethlehem*, another scene not commonly seen in this early art, besides appearing on the *cathedra*, the two book-covers, and a pyxis of Minden, that belongs with this group, occurs on the Stroganoff fragment of the Murano book-covers and the frescoes of the church of Deir Abou Hennys at Antinoë. The similarity of these last two Coptic examples, in which Joseph supports the pregnant Virgin on the animal that an angel leads, is too close to the rendering on the Chair and too rare a scene in Christian art not to suggest that it originated in Egypt, preferably in Alexandria whence it passed to become a characteristic type in Coptic art.

The distinguishing features of the *Baptism* on the Chair are the personification of the Jordan as a fleeing river-god and the appearance of two angels as attendants. In the Rabula Gospels⁴ and the miniatures of the Etschmiadzin Gospels of Syria neither of these features occurs, while on the Palestinian examples, such as the Monza phials,⁵ the river-god is absent and the angels are consistently nimbed. A representation of the Baptism similar to that on the Chair, occurs on an ivory in the British Museum⁶ which is generally supposed to have come from Egypt and is asserted by Leclercq to have originated in Alexandria.⁷ The fleeing Jordan, the principal feature of the type, appears also in two of the frescoes of Bawit.⁸ While the personification of the fleeing Jordan, as it occurs on all the examples, may be presumed

¹ Garrucci, *op. cit.* VI, pl. 447, 1. Smith, *Early Christian Iconography: A School of Ivory-Carvers in Provence. Princeton monographs.* (In press.)

² Le Blant, *Les sarcophages chrétiens de la Gaule*, pl. XVII, 4.

³ Leclercq, *op. cit.*, s. v. 'Ane,' col. 2058, fig. 599.

⁴ Garrucci, *op. cit.* III, pl. 130, 2.

⁵ Garrucci, *op. cit.* VI, pl. 433, 8.

⁶ Dalton, *Catalogue of Early Christian Antiquities in the British Museum*, pl. VII, No. 294.

⁷ Leclercq, *op. cit.*, s. v. 'Baptême de Jésus,' col. 370.

⁸ Clédât, *op. cit.* p. 225.

to have originated in Alexandria, there are no definite connections of the type, irrespective of the monuments on which it occurs, with that city. Were the *Chronicon Paschale*, which is generally supposed to have been compiled about the middle of the sixth century in Alexandria, the only Eastern source to describe the river Jordan as having fled in great fright at the words of the Almighty,¹ the relation of the type with the Hellenistic centre of Egypt would be more convincing. As it is, the type of the Baptism, as it appears on the Chair, is only another proof of my first assertion that the rather distinct representations of the Biblical scenes on the *cathedra* were carried over into Coptic Art.

While the rendering of the *Miracle of Cana* on the Chair in the same way in which it appears on the Coptic medallion in the von Gans Collection already referred to, gives added proof of the passage of the iconography on the *cathedra* into the native art, the scene of the *Multiplication of the Loaves and the Fishes* shows a certain connection with Alexandria. Among the catacomb frescoes of Alexandria, dating possibly from the third century, is a large composition in which Christ, between two scenes of repasts, blesses the loaves and fishes that Peter and Paul bring him on either side. The scene is an early rendering of the Eucharist, representing the *Blessing of the Elements* and the *Feeding of the Multitude*.² On the Chair of Maximianus the *Multiplication of the Loaves and Fishes* is depicted in two adjacent panels, one in which the Saviour blesses the elements and the other in which the people sit upon the ground partaking of the repast. Both recall in the arrangement and the attitudes of the figures, the scene of the Alexandrian fresco. More noteworthy, however, is the grouping on the Chair of the *Feeding of the Multitude* and the *Miracle of Cana* on either side of the *Blessing of the Elements*. It forms just such a composite symbolical and dogmatical rendering of the Eucharist as is figured in the Hellenistic fresco, and is interpretatively described in the Gospel of John.

Another scene of Eucharistic significance is the *Meeting of Christ with the Woman of Samaria at the Well*. Its only Biblical source is the Gospel of John where the Evangelist treats it with his usual emphasis on the symbolism. There were two ways of rendering this scene; one, an early, Hellenistic type, seen on the

¹ C. Jacoby, *Ein bisher unbeachteter apokrypher Bericht über die Taufe Jesu*, pp. 41-45.

² De Rossi, *B. Arch. Crist.* 1865, p. 72, fig. 5.

sarcophagi of the West, which shows the Saviour and the Woman of Samaria standing on either side of an earthen jar stuck into the ground from which the water is hoisted by a crude windlass; the other, a later and Eastern type, where the Saviour, after the Biblical account, is seated at the side of a real well which is covered by a well-house and operated by means of a pulley. The Rabula Gospels¹ and all the Byzantine examples after the seventh century adhere to the Eastern type. The ivory representation on the Chair, however, presents a transitional type; while it has the Eastern well-house and pulley, it depicts Christ as standing.



FIGURE 3.—JOSEPH AND POTIPHAR'S WIFE, CHAIR OF MAXIMIANUS.
(After Molinier)

Considering the Chair of Maximianus as a product of Alexandria, it is not surprising to find on it such a Hellenistic type as might have emanated, as an Eucharistic symbol, from that centre of Patristic theology. Associated with the rendering on the Chair, not only by similarity of type but also by a marked resemblance in the rather distinct form of the well-house, are Coptic representations on a pyxis in the Cluny Museum,² another in the Basilewsky Collection,³ and a third in the Youlgrave Collection.⁴ Another interesting example, where Christ stands, occurs on a terra-cotta stamp from Hadjeb-il-Afoun.⁵

While the *Healing of the Halt and the Blind* on the *cathedra* is of little aid in establishing the origin of the ivories, the *Entry into Jerusalem*, where a long carpet, instead of the traditional mantle, is unrolled in the pathway of the Saviour, presents valuable evi-

¹ Garrucci, *op. cit.* III, pl. 132, 1.

² Garrucci, *op. cit.* VI, pl. 438, 4.

³ Garrucci, *op. cit.* VI, pl. 438, 5.

⁴ Garrucci, *op. cit.* VI, pl. 452, 2.

⁵ *R. Arch.* XXII, 1893, p. 278, fig. 5.

dence for the Egyptian origin of the Chair. This type with the long carpet is peculiar to the Chair of Maximianus, the ivory book-covers in the Bibliothèque Nationale, the Etschmiadzin covers, and a carved wooden lintel at il-Mu'allaka, near Cairo.¹ The composition of the scene on the Chair is, moreover, remarkably close to the Egyptian wood-carving, especially in the odd

high-stepping movement of the ass and in Christ's posture on the animal.

The New Testament scenes do not offer the only evidence for the Egyptian origin of the Chair. While many of these present types that were peculiarly Egyptian and were continued on Coptic monuments, the scenes from the life of Joseph, the costumes, the ornament,



FIGURE 4.—THE BARBERINI DIPTYCH. (After Molinier)

and the technique show equally clear analogies with Coptic and Alexandrian art. The choice of the History of Joseph to decorate the sides of the Chair is at once a presumption in favor of an Egyptian origin.² The erudite rendering of the costumes of the Egyptians in these scenes, and the similarity of these

¹ Leclercq, *op. cit.*, s. v. 'Caire,' fig. 1853.

² Leclercq, *op. cit.*, s. v. 'Chaire épiscopale,' col. 60.

costumes to those of Egyptians on other monuments show they were copied from a common and indigenous type. The Egyptians, in the scene of *Joseph and Potiphar's Wife* (Fig. 3), wear loose blouses and long pantaloons which are both heavily em-

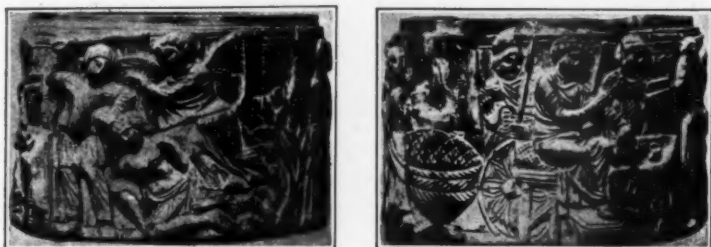


FIGURE 5.—ST. MENAS PYXIS IN THE BRITISH MUSEUM. (After Dalton)

broidered along the sleeves and down the sides and across the bottom of the trousers. Such costumes are worn by the Magi on the Etschmiadzin and Bibliothèque Nationale book-covers, by the Orientals on the Barberini diptych (Fig. 4), by the figures



FIGURE 6.—JACOB MEETING JOSEPH, CHAIR OF MAXIMIANUS. (After Molinier)

on the St. Menas pyxis from Egypt in the British Museum (Fig. 5), and by many of the figures on the frescoes at Bawlt.¹ They are not found elsewhere in Early Christian art.

¹ Clédat, *Mémoires de l'Institut français d'archéologie orientale*, XII, chapels XXXVII, XVII, LI.

The Barberini diptych, which has been generally attributed to Alexandria and shows consistent Egyptian characteristics in the curly heads, the trumpet-shaped flying fold, the cross that Christ carries, and the use of the drill holes for the pupils of the eyes, is related in technique and ornament to the Etschmiadzin and Bibliothèque Nationale covers, and presents some features in common with the Chair of Maximianus. The costumes of the mounted St. George and the soldier in the left-hand panel of the

diptych are almost replicas of the costumes worn by the soldiers in the scene of *Joseph Meeting Jacob* on the Chair (Fig. 6). The chitons, which hang from rings at the girdle in two flounces of unequal length, each flounce composed of triangular folds, are frayed at the edge and are decorated across the bottom by two horizontal lines. The decoration of the sleeves, —similar to that of the chitons,—which hang from the shoulders to the elbows, and the high, ornate buskins are nearly identical on the two examples. The headdresses of these soldiers on the diptych, which can



FIGURE 7.—IVORY FRAGMENTS IN THE BERLIN MUSEUM. (After Wulff)

be paralleled on Egyptian monuments, are almost the same as those of the soldiers in the scene of *Joseph Interviewing His Brethren* on the Chair. These costumes and headdresses are also worn by some of the figures in the frescoes of Bawft. Other analogies in the treatment of the figures, in this case with the miniatures of the manuscript of Cosmas Indicopleustes from Alexandria, have been pointed out by Ainaloff,¹ while Dütschke has attempted to show that certain of the animals on the *cathedra* were peculiar to Egypt.² In his argument for the Alexandrian

¹ Dalton, *Byzantine Art and Archaeology*, p. 203.

² Dütschke, *Ravennatische Studien*, 1909, pp. 279-281.

origin of the Chair, Graeven has noted the same rosette ornament on the shields represented on the St. Menas pyxis in the British Museum as appears on the shields borne by the soldiers on the Chair.¹ This

ornament may also be found on a bronze shield in the Cairo Museum,² on the shields carried by the soldiers on a Coptic wood-carving,³ and on a terra-cotta ampulla from Egypt in the Berlin Museum.⁴

The vine ornaments which decorate the front and sides of the Chair have been most frequently cited in proof of the Syrian origin of the work. Such forms of decoration, with birds, and animals



FIGURE 8.—THE CHAIR OF MAXIMIANUS. (After Molinier)

¹ Graeven, *Bonn. Jb.* 1900, pp. 147 ff.

² Strzygowski, *Koptische Kunst*, pl. XXVII, No. 9039.

³ O. Wulff, *Altchristliche und Mittelalterliche Bildwerke*, I, pl. VII, No. 243.

⁴ Wulff, *op. cit.* Nos. 1406, 1407.

intermingled in the foliage, although Oriental in character and characteristic of Syrian art, are, in the forms as they appear on the Chair, less Syrian than Alexandrian, and find innumerable parallels on the wood and ivory carvings of Alexandria.¹ A few examples are sufficient to make this clear. If the vine motives on the Chair, with harts, hares; ducks, peacocks, and other birds and animals mingled in the foliage (Fig. 6), are com-



FIGURE 9.—WOOD CARVING FROM GIZEH IN THE BERLIN MUSEUM. (After Wulff)

pared with the design on wood-carvings from Cairo² and Bawit³ and with an ivory-carving from Egypt in the Berlin Museum (Fig. 7), and if the motive of the two lions arranged symmetrically on either side of a vase which decorates the front of the *cathedra* (Fig. 8), is compared with the same design on a wood-carving from Gizeh in the Berlin Museum (Fig. 9) and a tombstone from Antinoë,⁴ it becomes evident that the ornaments on the Chair are at least as Egyptian as they are Syrian in character.

The technique of the work, while it suggests that two different artists of unequal skill executed the carvings, shows a recognizable style. The work is sketchy and in the scenes on the sides and back is very bold and rather careless; the folds of the garments, as well as the modelling of the figures, are obtained by long, free cuts of the knife which recall the technique on sundry ivory fragments from Alexandria in the Berlin Museum (Fig. 10). When compared with these ivory fragments, it is noticeable that the hands, eyes, and hair are executed in the same manner on the Chair, adding thus to the extensive evidence already accumulated that the Chair of Maximianus was carved in Egypt, and consequently in Alexandria.

I say consequently in Alexandria, because Alexandria was the only great centre of Hellenistic art in Egypt. Such Hellenistic features in the work on the Chair as the naturalistic ren-

¹ Leclercq, *op. cit.*, s. v. 'Chaire épiscopale,' col. 58-59.

² Wulff, *op. cit.* p. 88, No. 267.

³ Wulff, *op. cit.* p. 87, No. 262.

⁴ Leclercq, *op. cit.*, s. v. 'Antinoë,' fig. 795.

dering of the figures and the preservation of many traditions of classical art are so superior to the coarse, conventional art of Upper Egypt that it is impossible, once the Egyptian origin of the Chair is admitted, to accept any other locality as the place of origin. This Egyptian origin, on the other hand, is established by the fact that many of the types on the Chair appear to be peculiar to Egyptian iconography and occur with marked frequency on Coptic monuments, while the choice of subjects, the costumes, decoration, and technique are consistently analogous to the Christian art of Egypt. This attribution would then establish the Etschmiadzin and Bibliothèque Nationale book-covers, and other ivories, whose relation with the Chair has already been recognized, as products of an Alexandrian School of ivory carving.

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FIGURE 10.—IVORY FRAGMENTS FROM ALEXANDRIA IN THE BERLIN MUSEUM. (After Wulff)

E. BALDWIN SMITH.

AN UNPUBLISHED CALPIS

THE vase (Fig. 1) which is the subject of the following article was loaned by its owner, Mr. Marsden J. Perry of Providence, R. I., for the winter of 1915-1916 to the Fogg Museum in Cam-

bridge, Mass., where I had the opportunity to study it. Nothing definite is known of the time or place of its discovery or of its subsequent history. It is an Attic calpis, 37.5 cm. high, decorated in the severe red-figure style, without inscriptions, and in an excellent state of preservation. The subject of the design is the



FIGURE 1.—CALPIS BELONGING TO M. J. PERRY

return of Hephaestus to Olympus. The graceful form, with neck curving broadly into shoulder, and shoulder bending more boldly into the line of the body, points to a period after the sharp angles which are characteristic of the black-figured hydriae had

been softened into curves.¹ This change appears to have been practically contemporaneous with the introduction of the red-figure style of painting, for a few hydriae of the early form are decorated in the new manner,² while a number of the earliest calpides preserve the old black figures.³ Our calpis is a pleasing



FIGURE 2.—CALPIS IN BRITISH MUSEUM

mean between the short, plump vases in which the ratio of the greatest diameter to the height is very large,⁴ and those of long, slender proportions, having either very sloping shoulders,⁵ or the lower part of the body extremely tapering.⁶

The hydria, with its flat shoulder meeting the body at a marked angle, presented far fewer difficulties to the vase painter than did the calpis with its abruptly bending surface. On the earliest Attic calpides, probably in order to avoid this difficulty, the design was usually confined to the shoulder. Later it was extended to the body, although not in the form of a frieze encircling the vase, but only as a panel across the front. This calpis, having the decoration confined to the shoulder, represents therefore an early stage in the development of the red-figure

¹ Cf. Fölzer, *Die Hydria*, pp. 4 and 88.

² Fölzer, *op. cit.* p. 83.

³ Fölzer, *op. cit.* pp. 86 f. and 93.

⁴ Cf. e.g. *Annali*, 1849, pl. I.

⁵ Cf. e.g. Fölzer, *op. cit.* pl. 9, no. 156.

⁶ Cf. e.g. Pottier, *Vases Antiques du Louvre*, II, pl. 83, F 296.

style. In the commonest type of these early calpides, however, the design occupies only the front of the shoulder. In this respect our vase is an exception; the design here is extended so as to occupy also the space above the side handles and terminate on a line with them toward the back (Fig. 5). I know of but few calpides of the severe period which are decorated in this way.¹



FIGURE 3.—CALPIS IN BRITISH MUSEUM: SHOULDER

One of these is a vase, hitherto unpublished, in the British Museum, (*Cat. III*, E 167). Except that there is no decoration around the lip, and that the lotus pattern on the broad band turns upward, this vase appears from the description in the catalogue to be a very close parallel to ours. But the photographs (Figs. 2 and 3)² show that it is much broader—the height is the same—and that the profiles of lip and foot are straighter.

¹ Occasionally the design occupies the entire shoulder space, e.g. *Brit. Mus. Cat. III*, E 168.

² I am indebted to the kindness of Mr. Walters of the British Museum for the photographs of this vase and permission to reproduce them.

The style of both vases points to the same period but not to the same hand nor necessarily to the same factory.

Another calpis (Fig. 4), an exact counterpart to ours,¹ except, of course, in the design, which represents the slaying of Argos and the release of Io by Hermes (Fig. 6), is in the Boston Museum of Fine Arts.² These vases are certainly a product of the same factory. The style also is in general the same, but for

reasons which I shall state below I do not think that they are from the hand of the same painter. The scheme of decoration is identical. Both have as upper border to the design a strip of linked lotus buds pointing downwards; on either side, a net pattern; below, a red ground line; and across the front between the handles,



FIGURE 4.—CALPIS IN BOSTON

another band of downward pointing, linked lotus buds. Around the inside of the neck at the top is a band of black. The upper surface of the rim is reserved. The moulding on the edge of it is black, and around the lip runs a band of egg pattern. Around the middle

¹ Published by J. C. Hoppin, *Harvard Studies in Classical Philology*, XII, pp. 335 ff., plate.

² In the Boston Museum is also an unpublished and much damaged calpis of similar form and like scheme of decoration, but smaller. With this may be compared hydriae E 171-173 of the British Museum.

of the neck is a thin purple line. The inside of the side handles and the space on the body of the vase between the extremities of these handles is reserved. Two tiny parallel reserved lines encircle the bottom at its junction with the foot, a third, on the foot, marks the angle where the base turns outward, while the edge of the lower moulding on which the vase rests is also reserved.

The subject of our vase, the return of Hephaestus to Olympus,¹ was a favorite with Athenian vase painters, especially in the black-figure period and in the red-figure period before the fine style. According to the myth, Hera at her son's birth was so ashamed of the ungainly child that she cast him down from heaven. Hephaestus in revenge sent his mother a golden throne fitted with invisible fetters which bound her fast. None of the other gods was able to release her and Hephaestus stubbornly refused to be moved. Then the gods held a conference. Ares promised to bring back the revengeful god by force but he was chased off with firebrands. Finally Dionysus, a confidant of Hephaestus, made him drunk and thus effected his return.

Vase painters interested themselves only in the last scene,² the return of Hephaestus to Olympus.³ Waentig enumerates forty-two vases with this subject. On seventeen of these, however, Hephaestus appears on one side of the vase and Dionysus on the other.⁴ Loeschcke speaks of "about fifty" vases which present this scene.

¹ See Paus. I, 20, 3. This passage, in which Pausanias describes a wall-painting in the temple of Dionysus at Athens (probably built between 421 and 415 B. C, cf. E. Reisch, *Eranos Vindobonensis*, p. 3), is the earliest record that we have of the entire myth:

² Cf. Waentig, *De Vulcano in Olympum reducto*, p. 18 ff.

³ Homer knows nothing about this part of the myth (cf. II. I, 590 ff. and II. XVIII, 395 ff.), but comments in Photius and Suidas on lost works of Pindar and Epicharmus (cf. Wilamowitz, *Göttinger Nachrichten*, 1895, p. 217, note 3) show that these writers knew of the magic throne, and Plato's reference, *Rep.*, p. 378 D, to the binding of Hera indicates that that part of the myth was familiar in his day. Wilamowitz (*loc. cit.*, pp. 217 ff.) has shown that the entire myth formed the subject of a Homeric Hymn now lost, which was composed in Ionia not later than the time of Archilochus. Toward the end of the fifth century the myth disappeared entirely from literature and from art.

⁴ Loeschcke (L. von Schroeder, *Griechische Götter und Heroen*, pp. 83 ff.) uses this separation of the two gods on such vases as one argument for his now generally accepted theory that alongside of the type of myth which unites Hephaestus with Dionysus, there also existed the type which represented each god in his Bacchic character independently of the other.

In addition to our calpis the following vases which represent the two gods together in one unbroken procession, are known to me through illustrations or descriptions:¹

1. Crater (François Vase),—Florence, Milani, No. 4209. Early b. f. Publ. Furtwängler-Reichhold, *Griechische Vasenmalerei*, pls. 1-3; 11-12. Waentig, B.
2. Crater,—Brit. Mus., B. 42. Early b. f. (imitation of Corinthian). Publ., Walters, *Hist. of Anc. Pottery*, I, pl. 21.
3. Crater,—Hermitage, Stephani, No. 55. Early b. f. Publ., *Compte Rendu*, 1863, p. 5. Waentig, D.
4. Crater,—Louvre, E 876. Middle period b. f. Publ., Pottier, *Vases Ant. du Louvre*, II, pl. 62.
5. Oenochoe,—Bologna, No. 71. Middle period b. f. Publ., Pellegrini, *Cat. dei Vasi Greci Dipinti*, fig. 14.
6. Cylix,—Florence, Milani, No. 3900. Late b. f. Publ., Inghirami, *Vasi fittili*, pl. 262. Waentig, C.
7. Crater,—Louvre, G 162. Severe r. f. Publ., *Monum. Ined.*, Suppl. pl. 24. Waentig, OO.
8. Cylix,—Bibl. Nat., No. 542. Severe r. f. Publ., *Monum. Ined.* V, pl. 35. Waentig, I.
9. Cylix,—Bibl. Nat., No. 539. Severe r. f. Publ., Lenormant et De Witte, *Élite des Monum. Céramographiques*, I, pl. 44. Waentig, K.
10. Fragment,—Formerly in Coghill Collection; present location unknown. Late severe r. f. Publ., Millingen, *Vases de Coghill*, pl. 41. Waentig, V.
11. Crater,—Location unknown. Late severe r. f. Publ., *Monum. Ined.*, Suppl. pl. 23, 1. Waentig, L.
12. Crater,—Deepdene, Hope Collection (?). Late severe r. f. Publ., *Élite Céram.*, I, pl. 47. Waentig, R.
13. Crater,—Vienna, Sacken and Kenner, No. 122. Early fine r. f. Publ., *Élite Céram.*, I, pl. 48. Waentig, U.
14. Crater,—Naples, St. Angelo, No. 701. Early fine r. f. Waentig, X.
15. Crater,—Naples, No. 2412. Early fine r. f. Publ., *Élite Céram.*, I, pl. 45 A. Waentig, Q.
16. Crater,—Louvre, G 404. Early fine r. f. Publ., Millin, *Peintures de Vases Antiques*, II, pl. 66. Waentig, P.
17. Crater,—Bologna, No. 282. Early fine r. f. Publ., Pellegrini, *Cat. dei Vas. Gr. Dip.*, Fig. 74 a.
18. Form unknown,—Deepdene, Hope Collection (?). Early fine r. f. Publ., *Élite Céram.*, I, pl. 43. Waentig, O.

¹ Parts of the figures of two satyrs found on a fragment in Stuttgart, may have belonged, Hartwig thinks, to a scene which represented the return of Hephaestus to Olympus (*Meisterschalen*, p. 611).

19. Crater,—Louvre, G 421. Early fine r. f. Publ., Millin, *Vases Ant.*, I, pl. 9. Waentig, T.
20. Crater,—Naples, St. Angelo, No. 688. Fine r. f. Waentig, QQ.
21. Crater,—Munich, Jahn, No. 780. Fine r. f. Publ., Furtwängler-Reichhold, pl. 7. Waentig, N.
22. Pelike,—Munich, Jahn, No. 776. Fine r. f. Publ., Furtwängler-Reichhold, pl. 29. Waentig, S.
23. Oenochōē,—Private collection. Fine r. f. Publ., Furtwängler-Reichhold, pl. 120, 1.
24. Stannus,—Location unknown. Fine r. f. Publ., Gerhard, *Auserl. Vasenb.*, pl. 58.¹ Waentig, M.

The earliest Attic example is the François vase.² Here Hephaestus, seated on a mule which Dionysus leads, and accompanied by nymphs and satyrs, is arriving in the presence of the assembled gods, where Hera sits upon the magic throne awaiting her release. This is the only vase on which an august assemblage of the immortals is represented in connection with the return of Hephaestus.³ The usual scene shows Hephaestus, either riding on a mule, according to the more ancient tradition, or on foot, with Dionysus and a sportive train of satyrs and maenads.⁴

¹ Gerhard, *Auserl. Vasenb.* I, pp. 214 f., cites seven others (d, e, f, g, h, o, r), Waentig (*op. cit.* pp. 20 ff.), eight (E, F, G, H, W, Y, Z, AA), of which three (E, F, G) are identical with three of Gerhard's (d, g, h).

On a cylix in the Louvre, G 135 (cf. Hartwig, *op. cit.* pp. 652 ff.), which bears the inscription Δῖος καλός, Hephaestus appears on one side of the vase seated on a mule and accompanied by three satyrs. Dionysus with a satyr and two maenads is represented on the other side. I find no illustration of the vase and it is impossible to determine from the description whether the two sides of the cylix represent an unbroken procession or two separate scenes.

² On a Corinthian vase of the early sixth century published by Loeschke, *Ath. Mitt.* 1894, pp. 510 ff., pl. VIII, Hephaestus, with hideously deformed feet, is represented on a horse among a group of followers, in one of whom it is perhaps possible to recognize Dionysus.

³ See Loeschke, in L. von Schroeder, *Gr. Götter u. Heroen*, p. 84, note 1. On neither of the other two vases there cited, however, are more than one or two of the waiting assembly introduced.

⁴ Loeschke, *op. cit.*, points out that such scenes need not all be interpreted as abbreviated imitations of the representation on the François vase, but that in some cases, where Hera and the assembled gods do not appear, Hephaestus and Dionysus, each in his own Bacchic element, may be regarded as simply represented together without reference to the return to Olympus. Wilamowitz, *Göttinger Nachrichten*, 1895, p. 237, suggests that the frequent appearance of these gods together follows as a matter of course, if we accept the reasonably reliable myth (Schol. II. XIV, 296) which makes Naxos the scene of Hephaestus' early training, for this island was also one of the oldest seats of the cult

On our vase (Fig. 5) are six figures, moving to the right. A maenad leads the procession with long, swinging steps; in each of her outstretched hands she holds a lighted torch, the flames of which break into the border. She wears a long chiton with full sleeves reaching to the elbow, and a himation. Her hair is done high with a fillet wound three times round her head. She looks back at the lagging wine-god as she hurries along. Behind the maenad is a little piping satyr who is scarcely shoulder high to the other figures. On his head is an ivy wreath, and the flute-case hangs from his arm. A goat follows the satyr and then come Dionysus and Hephaestus walking side by side. Dionysus, who leans heavily forward, has in his left hand a knotted staff, the upper end of which projects into the panel border. Held out behind him in his right hand is the cantharus. On his head is a taenia over a wreath of ivy, and he wears the usual full-length chiton and himation. His long wavy hair falls loose over both shoulders. Hephaestus holds the tongs in his outstretched left hand and carries his hammer resting on his right shoulder. On his head is a little round felt cap. His short wavy hair falls close and full about his neck, and he wears a short,

of Dionysus. To strengthen his assertion, Loeschke cites not only the above mentioned vases, on which the two gods are separately depicted, one on each side of the vase, but also those scenes of a different nature in which both gods appear, e.g. Masner, *Vasen d. Wien. Mus.* pl. II, No. 218; Bulle, *Die Silene in d. gr. Kunst*, p. 8, No. 14 (here may be added Gerhard, *Auserl. Vasenb.* pl. 39), and vase No. 1179 of the Munich collection (Jahn) on which Dionysus does not appear at all. The same is true of a stamnos from Cervetri in the Castellani Collection in Rome (*Monum. Ined.*, Suppl. pl. 23, 2). An additional point, which seems to me to be worthy of notice here, is the fact that on only a few of these vases (Nos. 8, 9, 15, 22 above) is Hephaestus represented as drunk, while a number, among which is our calpis, show the fire-god walking erect and quite able to go his own way, while Dionysus, who should, according to the myth, be responsible for the journey, leans heavily on his thyrsus or has to be pushed along by a convenient satyr. The representation of Hephaestus riding on a mule does not necessarily reflect the tradition recorded in Aristides, *In Bacchum*, p. 49, that it was thus that Dionysus effected his return to Olympus, for on none of the vase paintings does Hephaestus seem at all uncertain of his seat. This manner of depicting him may be due in part to the tradition which makes him lame. On a number of the earliest vases (Furtwängler-Reichhold, pls. 1-2 and 11-12; *Ath. Mitt.*, 1894, pl. 8; Brit. Mus., B. 42; Masner, *op. cit.* pl. II, No. 218), which invariably represent the god as riding, and some of which do not show the return to Olympus, Hephaestus' feet are so deformed as to make walking impossible. In accordance with the idealizing tendency of later times, this deformity does not appear on red-figured vases.

sleeveless chiton with decorative markings on the folds. Next comes Hermes wearing a tall, pointed shepherd's cap. A himation is thrown over his left shoulder and right arm, but the chiton which he usually wears is lacking. On his feet are *endromides* and over his left shoulder, the caduceus. He has been playing the lyre, but has suddenly halted and drawn back



FIGURE 5.—CALPIS BELONGING TO M. J. PERRY: SHOULDER

to avoid collision with the cantharus, which Bacchus has almost thrust into his face. A satyr, who follows Hermes at the end of the procession, has only avoided striking the god with the end of the thyrsus, which he carries in his right hand, by suddenly drawing his right arm back. The head of the thyrsus projects into the border pattern at the left. This satyr also wears an ivy wreath on his head. Between him and Hermes is an altar in the form of an Ionic capital on a plinth.

The following peculiarities in the design are to be noted. In the first place, the diminutive stature of the piping satyr is not

common. The fact that on six other vases of our short list the same peculiarity occurs might seem to contradict this statement. But this is not the case. On No. 22, where the satyr who is holding up the drunken Hephaestus would be somewhat below normal height, even were he standing erect, and on No. 12, on which the satyr who steadies the reeling Dionysus is quite tiny, this characteristic seems less due to a deliberate plan on the part of the painter than to the necessity imposed by the position in which he wished to place the figures. On No. 23 the case is different. Here the little fellow who leads the mule on which both gods are riding is only a child with round baby face and features.¹ The most arbitrary and unusual representations of all are the little pigmy satyrs perched on the shoulders of large satyrs (Nos. 10, 20). On No. 6, on the side of the cylix opposite the Bacchic train with Hephaestus and Dionysus, the painter in depicting a group of satyrs has produced a most pleasing effect by the use of figures of different sizes. In the same way our painter seems to have drawn the flute player small, in order to secure by variety a more effective composition. There can be no question here of a desire to emphasize the divinity of the gods by representing other figures smaller, as Brygos is fond of doing,² for the other satyr of our group is of normal size.

Not the least unusual feature of the scene is the goat. This animal is often enough given as an attribute to Dionysus, but it does not seem to have the honor of accompanying the god in any other procession in which Hephaestus appears.³ Perhaps it is because of this distinction that we have here such a remarkable specimen. To this creature, with its long beard and its extremely long horn extending the entire length of its neck and shoulder to beyond the middle of its back, and lying so flat as to be scarcely distinguishable from the mane, I know of no analogy except possibly the goat on a stamnos in the Louvre, published in *Annali*, 1862, pl. H.

Hephaestus is always represented on the earliest vases as bearded, but occasionally on the later vases, as on other monu-

¹ See also Tischbein, I, pl. 51; Reinach, *Répertoire* II, p. 290.5.

² Cf. e.g. Hartwig, *op. cit.* pls. 34, 35, 36.

³ See, however, Gerhard, *Auserl. Vasenb.*, pl. 39, where Hephaestus meets Dionysus.

ments of art, a youthful type appears.¹ On three of the vases cited above (Nos. 12, 16, 21) the god is thus portrayed, but on each of them he is riding. Our vase is thus unique in making the youthful Hephaestus go on foot.

But by far the most interesting figure is Hermes with the lyre. If we except the François vase, where so many of the gods are assembled, and the Vulci vase (No. 7), on which Hermes is assigned the extraordinary task of leading the mule, this god appears in none of these scenes with Hephaestus. Furthermore, among all Attic vases thus far published I know of only three on which Hermes is represented with the lyre, an instrument of his own invention. On a black-figured amphora in the British Museum (B167; *Monum. Ined.* IV, pl. 11) he leads a procession of deities playing on the lyre. On the interior of a red-figured cylix, also in the British Museum (E 58; *Monum. Ined.* IV, pl. 33), Hermes, with the caduceus in his right hand and the lyre in his left, is running over the waves. And finally, on a red-figured vase in the ducal museum in Gotha (*Monum. Ined.* IV, pl. 34) a youth sitting on a rock playing the lyre while three satyrs dance about him is designated as Hermes by an inscription, but is given none of the usual attributes of the god. Here might also be mentioned a black-figured cylix of Xenocles (Overbeck, *Gall. heroischer Bildw.*, pl. IX, 2) where Hermes is seen with the syrinx, another instrument of which tradition makes him the inventor, and two vases which depict him as endeavoring to recover the lyre from Apollo, one, a red-figured amphora in the Bibliothèque Nationale (de Ridder, No. 373; Heydemann, *Pariser Antiken*, p. 75, No. 37), the other, a cup from Vulci (Overbeck, *Kunstmythologie*, *Apollo*, p. 420, 3; *Atlas*, pl. 24, 17). On a third vase, a cup in the Bibliothèque Nationale (de Ridder, No. 820), the two figures which are represented as contending for the possession of the lyre are usually interpreted as Hermes and Apollo.

The representation of Hermes leaning slightly backward illustrates in a modified form a favorite motive of Brygos. The two lyre-players on the exterior of a cylix in Copenhagen (Hartwig, *op. cit.* pp. 332 f.) offer good parallels. In both of these figures the backward inclination is more pronounced than in our Hermes. Their position, as well as the shape of the

¹ See Roscher, *Lexikon*, I, col. 2042.

space to be filled, requires them to hold the lyre high instead of low.

Ours is the only vase, so far as I know, on which an altar is introduced as a part of this particular scene. Now neither altar nor temple is connected with the myth of Hephaestus, and the presence of Hermes, as the only unusual personage in the procession, would in no way necessitate the introduction of an altar, nor does one appear on the other two vases on which Hermes is represented. It can therefore be accounted for here, as, I believe, on numberless other vases, solely from the artistic standpoint. Just as the goat on the right side of the design affords variety and lends harmony to the composition, so the altar on the left side breaks the monotony of a succession of figures and serves to fill in the larger space at the bottom of the curving panel.

The drawing on our vase is not only extremely careful and accurate, but also light, easy, and natural. The painter has been most happy in his grouping of figures, and the entire scene, though dignified and impressive, is alive with movement and grace. Archaic hardness has practically disappeared, hampering conventions have been nearly overcome. Yet a slight archaism in the drawing of the eye and a certain formality in the lines of the folds place the vase within the period of the severe style, though probably not earlier than 470 B. C. General characteristics of the painter's style are seen in the rather large, well-formed heads, not unlike those on the vases of Euphronios; in the rounded, not very prominent noses with no nostril markings; and in the full lower lip which, in the case of Hephaestus and the maenad, is somewhat drooping. The eyes vary considerably both in contour and in the position of the pupil. This lack of uniformity is not uncommon on red-figured vases toward the end of the period of the severe style, where the drawing of the eye was in the transition stage. On our vase it is also due in part to the desire of the painter to gain variety of expression, a method which was so brilliantly employed by Euphronios. The pupils are all represented by black dots. Beards are either pointed and have an edge of straight, stiff lines, such as are often found on the vases of Hieron and of Brygos, or are full and edged with short curls, a type which is also common in this period. Hermes' beard is short and pointed, with no markings at the edge. As on so many of the red-figured vases of this

style, the drawing of the hair also varies; that of Hermes and the maenad is not worked out in detail at all, on the two satyrs it is somewhat looser with the ends slightly separated, while Hephaestus' hair is very light and free, as so often on the vases of Brygos, and a brownish-yellow paint seems to have been applied to give a blonde effect. Dionysus' hair hangs in long, wavy strands. Hermes and Dionysus have along the forehead and temple the row of little knots, perhaps curls, which is so common on the vases of Euphronios and which all the later painters of the period used to some extent. Most unusual is the drawing of the ears, which look as though they had been reversed. I have not found this peculiarity on any other vase. The hands are well drawn. No nail markings are given, and the finger tips are very blunt, but one feels that hands interested the painter rather as a means of expression than as an end in themselves. It might be observed here that the only inaccuracy of any significance in the entire design is in the discrepancy in size between the hands of the larger satyr.¹ The legs are extremely shapely with delicately rounded knees, but they are rather short, especially in the thigh. This makes the figures a trifle heavy in appearance. The feet, high in the instep and sloping to a point at the toe, disappear, as it were, in the ground line, and except for very slight markings on Hephaestus' right foot, the toes are not indicated. The heels are smooth and round. The ankle joint is either marked very slightly or not at all. On very few vase paintings of this period are feet drawn so simply and with so few lines, yet the effect is satisfying, even pleasing. The firm, well-rounded arms and shoulders are finely drawn. Especially admirable is the right arm of the satyr with the thyrsos. The relatively few markings on the bodies of the satyrs would seem to indicate an indifference to anatomical lines, a characteristic which was shared by both Brygos and Hieron. Folds are indicated by very fine, thin black lines, except on the upper part of the maenad's chiton where the lines are thicker and done in yellow. The maenad's himation is marked at the edges by graceful rippled lines which give an extremely light and airy effect. Short, thick strokes on the ends of folds, such as those on Dionysus' himation, are not

¹ This fault is a very common one on vase paintings, especially when one hand is represented grasping an object and the other open.

common.¹ The decorative markings on Hephaestus' chiton are also characteristic. In general our painter seems to be quite individual and very successful in his rendering of material and drapery.

Dark purple paint is used for the flames of the torches, the fillet around the maenad's head, the string of the plectrum and the crosspiece of the lyre. The maenad's necklace, the folds in the top of her chiton, the upper part of the goat's beard and streaks in its mane, the decorative markings on Hephaestus' chiton, his cap, and a part of his hair are done in brownish yellow. Lines of preliminary sketching are readily discernible and very numerous, particularly on the legs of the undraped figures and on the bodies and arms of the satyrs. Strokes across Hermes' body indicate the line of the caduceus.

A comparison with the calpis in Boston² is interesting (Fig. 6). As has already been said, the two vases are practically identical in size, form, and style of decoration. This is true even to a slight irregularity in the space between the ground line of the panel and the top of the broad lotus band. On both the design extends into the panel border at four points. The altars in the two designs are almost the same. The altar in the form of an Ionic capital appears, to be sure, on numberless Greek vases. It is in fact the commonest form on vases of the red-figure style. But scarcely any two are exactly alike,³ and the design seems to vary at the caprice of the painter. The style of painting on the two vases is similar. On the vase in Boston we find the same general form of head, similar types of hair and beard, rather small noses with no nostril markings, shapely legs and knees, and in some instances the same type of tapering foot with little or no marking on the ankles. But there are also significant points of difference. Omitting details for the moment, two general features strike the eye at once; first, there is not on the Boston vase the naturalness and freedom of movement which are so strikingly illustrated in our design. The vigorous action shown in the central figures makes the immobility and stiffness

¹ On a cylix of Brygos (Hartwig, *op. cit.* pl. 36), many of the folds are marked in this way.

² See above, p. 41.

³ The altar on a Nolan amphora in the Boston Museum (No. 422) and one on a vase in the Bibliothèque Nationale (de Ridder. II, No. 400) resemble these two more nearly than any others that I have seen, but they are by no means identical.

of the other figures painfully conspicuous. That the painter of our vase, who evinces such exceptional feeling for rhythm and grace of movement, could have drawn the lifeless figures on the vase in Boston does not seem possible. It would be difficult to believe, for example, that the light hand which knew how to give such a genuine touch of life to every figure on our



FIGURE 6.—CALPIS IN BOSTON: SHOULDER

vase ever painted this awkward Zeus,¹ or the priestess, standing as lifeless as a statue in the path of the frantic heifer and the fleeing Argos. Still less likely is it that Hera in her helpless, ludicrous pose was executed by our painter's hand. The second general point of difference is in the drawing, which is far less careful and accurate on the vase in Boston. The right arm

¹ I use the names assigned by Dr. Hoppin, *op. cit.* To be sure, the motive of leaning on a staff is a very common one, especially on the vases of Duris and of Hieron, but it is not introduced in combination with a scene of such violent activity as the Boston vase presents.

of the priestess presents the same motive as that of Hephaestus,¹ but her elbow is a decided failure. Argos' right elbow is much too sharp, and the arm above the elbow is not accurate. His left forearm is smaller than his right, and the entire left arm is too short. Hermes' left leg is also too short. The right foot and toes of the priestess are extremely long, out of all proportion to her height. Worst of all is the disproportionate figure of Hera with the small, undeveloped body and the large, carelessly drawn head, hands and feet. Characteristic, too, of the general carelessness of the painter is the drawing of the panel more than an inch farther around the vase on the right side than on the left.

The following are a few minor points of difference; on the Boston vase the eyes, on the whole, are more archaic; the drooping of the lower lip and the upward turn of the mouth are much more pronounced and recall many of the faces on the vases of Hieron; in accordance with the general stiffness of the figures, the folds of the garments are also heavier and more set; instead of falling in zigzags, the himation in each instance extends almost to the feet, where the ends of the folds are indicated by hook-shaped markings similar to those on many of Hieron's vases. The folds in Hermes' chlamys may be likened to those in the himation of the maenad on our vase, but they are not so lightly and accurately drawn.² The lines in general are a trifle heavier and thicker. Traces of preliminary sketching are less numerous and the grooves are in many places filled with or almost obliterated by a pinkish coloring substance which Mr. Caskey, Curator of Classical Art in the Boston Museum, suggests may be remnants of a final coating which was sometimes applied. The yellow and the purple paint on the Boston vase are much brighter than on ours, and the same is true of the color of the clay. The glaze is also a trifle more brilliant, but all this is doubtless due to different conditions of preservation.

What now is the relationship between the two vases? They were certainly made in the same factory and at the same time. At any rate, neither had left the factory before the other was completed. If either served as a direct model for the other, it

¹ It is interesting to note that this motive, which is not a common one, appears twice on a cylix of the van Branteghem collection (Hartwig, *op. cit.* pl. 40).

² Notice, for example, the unsuccessful attempt to represent the folds as parting over Hermes' left elbow.

would seem probable that it was our vase, the better executed of the two, which was imitated. They were designed to be companion pieces, hence the striking general resemblance. They were not decorated, at least not entirely, by the same hand, hence the numerous points of difference.

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ANCIENT ORIENTATION UNVEILED

I

ORIENTATION played a dominant rôle in ancient religions, particularly in those that laid stress on ritual, of which orientation was an essential part. Now that ritual has become the safest cornerstone of the science of the history of religion it seems quite necessary to extricate the subject of ancient orientation from the Serbonian bog in which it has lain.¹

By orientation we mean the direction in which a priest, diviner, magistrate, augur, worshipper or plain citizen faced, standing or sitting, in the performance of a public or even private ceremony, a religious, political, or social rite—consecration, sacrifice, prayer, consultation of the gods, etc.

¹ There may be some who will object that this paper is not properly to be classed as archaeological. My own position is that archaeological principles are far more important than archaeological material, *per se*. If the principles stated in this and the following paper are accepted, then a norm will be set up that will determine the classification and meaning of innumerable archaeological data, and will give the why and wherefore of many hitherto unnoticed or supposedly insignificant peculiarities of artistic composition and juxtaposition.

As an instance of the application of these principles, I will cite a paper which I read before the last International Congress of the History of Art in Rome (1912) on a method for distinguishing Byzantine works of art from their Italo-Byzantine imitations. Very often this has been impossible to do either on stylistic grounds or from documentary proof, the similarity being so great. But I showed how, with the real Greek Byzantine artist the place of honor was always on the right hand of Christ, while the Italo-Byzantine artist, true to his Latin traditions, considered the left side of Christ to be the more honorable, thus providing an almost automatic means for distinguishing them. In a paper in the *Am. Jl. of Philol.* XXXVI, 1915, pp. 314 ff., entitled '*Grabovius—Gradius, Plan and pomerium of Iguvium*', and in another paper in the *A.J.A.* XVIII, 1914, pp. 302 ff., entitled '*Circular Templum and Mundus*', I touched on questions of Etruscan and Italic orientation, especially as related to city plans and consecration.

A prelude to the present papers was one on Ancient Orientation and the Lucky Left, read Dec. 30, 1914, at a joint meeting of the Archaeological Institute and the American Philological Association at Haverford; cf. *A.J.A.* XIX, 1915, p. 73.

Once the direction of orientation was determined everything was in front or behind, to the right or the left, and in order to attain precision it was customary to divide both heaven and earth into quarters. With the Greeks there were ordinarily but two halves, divided by a line running north and south into the eastern and western parts of the world. But nearly all other races, beginning with the Babylonians, added a second intersecting line running east and west, making both earth and heaven into four quarters, and the Etruscans subdivided these into sixteen sections for divination.

Such customs had the widest ramifications, affected the smallest details of private life and the good and bad fortunes of the individual, in the associations of luck and misfortune with the right and left. It is singular but true that modern scholarship has failed to understand and solve the most important questions involved.

In the first place we moderns are accustomed to thinking of right and left in connection with ourselves, or, in philosophic terminology, we think of them as something subjective and contingent, and not objective and permanent. Man is considered the unit to which they are related. This has relegated all right and left matters to an unimportant place. It was quite otherwise in antiquity, and the antique idea can be traced for some four thousand years or more, well into the Middle Ages. This antique idea was that the world itself and not man was the basis of orientation and direction, and that it was to the world as a whole that the ideas of right and left, luck and misfortune were related. There was a front and back, a right and left of the world. These were objective and permanent factors, to which the human associations of right and left were entirely subordinate.

This not only gives the key to many ancient ideas, customs, and ceremonies, but I have found that it had an unsuspected bearing on works of art. The theory of world orientation determines the direction in which artists make their figures move and face as well as their grouping and interrelation. I have seen certain cases in which neither style nor documentary evidence showed whether a work was Greek or Etruscan, Byzantine or Latin, in workmanship, and the matter was unexpectedly and simply determined by noting what scheme of orientation was followed.¹

¹ If a bird of good omen is on the right the work is Greek; if on the left it is Etruscan. If a religious or triumphal procession moves from right to left it is

Here again modern scholarship has had serious lapses, and, hypnotized by Greek traditions, has not understood that there were two great opposing orientation camps, the southern and the northern, one championing the left as the lucky side and the other holding to the lucky right. These differences, as we shall see, were based on opposing theories as to the origin of the universe and the relations between gods and men.

The commonly understood direction of orientation is toward the east; so common as to have given its name to the idea. It is part of our ancient inheritance. In all religions the east was regarded as the source of life and luck. With the increasing popularity of some form of sun worship it was inevitable that prayer should be offered facing the east. But this eastern orientation seems to have been not primary but secondary. More primitive and basic were two schemes, connected perhaps with pre-solar cults, which developed two forms antagonistic to each other. This resulted with one group of peoples in an orientation toward the south and with another in an orientation toward the north. Both of these systems admitted the east as a secondary direction of orientation. When I say that the east was secondary, that is perhaps a wrong expression, for it was primary in both systems in connection with the earth, in the sense that the beginning of life was in the east, while its culmination was respectively in the south or north. Finally, there are distinct traces, though less important and less generally diffused either in place or scope, of

Greek rather than Etruscan or Roman, whose processions invariably move from left to right; always with the sun. When Livy (XXI, 31) says that Hannibal after crossing the Rhone, turned to the *left* to attempt his famous crossing of the Alps into Italy, his critics have always considered it a *lapsus calami* for *right*; whereas, as my friend Professor Westcott pointed out to me, Livy meant not Hannibal's left (for Hannibal was facing north and turned to *his* right) but the left side of the world, which was for Livy the east. He finds the same solution for the difficulty in Livy, XXII 3, 6, where Hannibal marches on *Faesulae laeva relicto hoste*, where the *laeva* refers to the geographical left of the world and not to Hannibal's left, a fact which will prove a great relief to future commentators. This was an interesting application of my new principle. I find it also applies to city plans, so that when an ancient document, such as the archaic topographical notes of the Argei on Rome, speaks of buildings as *cis* and *uls* (back of, in front of), *dexter* and *sinister*, it does not refer to the individual walking down the street as the starting point but to the city itself as oriented southward and to the individual as taking his ritual position. These cases are mentioned merely to indicate various fields in which the new principle can be applied.

an orientation toward the west. It was usually limited, we shall see, to associations with the dead and the deities of the underworld, as the logical antithesis of the life-giving east, although this fact also has not been always understood.

Each of the four points of the compass was, therefore, used in ancient orientation, and as modern scholars failed to see any special *raison d'être* for the variations, the question has been quite generally raised by them whether there really was any significance or system involved, or else they have seemed deliberately to close their eyes to the evidence. The most learned editor of the classic texts of ancient China, Legge, states, in the face of innumerable passages in these texts to the contrary, that the right hand was the place of honor in China.¹ In the same way Dr. Jastrow, the foremost authority on Babylonian religion and ritual, believes the right lucky and the left unlucky in Babylonia because he believes this to have been the case among all ancient peoples.² Such obsessions lead to unconscious falsification and misrepresentation of records and results.

It has been the same for Greece and Rome. The two foremost modern authorities on the ritual of classic religions, Wissowa and Bouché-Leclercq, have thrown up their hands in despair. Bouché-Leclercq says: "The successive deviations of custom on this delicate point and the contradictory allegations of ancient writers have so complicated the question that there is none more difficult of elucidation. The axis of the diviner's *templum* seems to have raced, like a crazy compass, all around the horizon, and one may justly wonder what becomes of a supposed exact science in the service of religion."³ This remark applies to Greece, Etruria, and Rome. Of the early Roman custom Wissowa⁴ says: "In the one known instance of the inauguration of a priest (that is of Numa as king, in Livy, I, 18) the augur turns his face to the east so that the north is on his left and the south on his right; but we have even more certain proof that the augur directed his gaze southward, so that he had the east on his left and the west on his right, and so it seems probable that the direction was left entirely

¹ *Sacred Books of the East*, Vol. IV, II, p. 576, in note to *She-King*, Pt. IV, Bk. I, Ode 7; and *passim*.

² *Aspects of Religious Belief and Practice in Babylonia and Assyria*, p. 170; *Die Religion Babylonien und Assyrien*, II, pp. 238, 288, 635 and *passim*.

³ *Histoire de la divination dans l'Antiquité*, IV, p. 20.

⁴ *Religion und Kultus der Römer*, p. 452.

to the choice of the augur." This quite unacceptable suggestion of Wissowa shows to what a state of helplessness the apparently divergent testimony has reduced the most brilliant and scholarly minds.

The same uncertainty and game of cross-purposes extends to the rest of the field and has been well summed up in an article by F. B. Jevons in *Cl. R.*, 1896, pp. 22-3, entitled '*Indo-European modes of orientation.*' He begins with J. Grimm's¹ statement that the primitive Aryan faced east: Aryan words for "east" mean in front, for "south" to the right and for "north" to the left, and as the Aryan's gods were in the north, therefore *north* and *left* were lucky. This theory survived in Rome. But the later period of the Aryans, as represented by the Greeks, *et al.*, reversed this, and since they regarded the right as lucky, they must have faced to the west! The second authority, O. Schrader,² in opposition to Grimm, contends that as Sanskrit, Greek, and Teutonic sources agree in regarding the right as lucky, this was the original Aryan notion. He also believes that in order to have the east on his lucky right side the primitive Aryan faced north and not either east or west. On the other hand he argues that the Romans must have faced south in order to have the east on their left. "Thus between them Grimm and Schrader box the compass" as Jevons remarks; and he also justly adds that they give no adequate reasons for their shiftings of the compass. He then proposes a solution of his own, based not on position but on motion, which it is needless to discuss at this point.

Now, it must not be imagined that this question is merely academic, technical, and of limited bearing. Quite the contrary, it colored the thought of almost every ancient people. If we consider Rome as a typical example, it is a well-known fact that the whole of Roman religious and civil polity, the correct relation between the state and the gods, the *pax deorum*, the minutest details of civic and military and even private activities, were managed by augury; and augury was based on the auspices; and the auspices were limited and determined by the *templum*, both celestial and terrestrial; and the *templa* and auspices were both dependent on orientation. Consequently orientation was the basal concept of primitive ritual and divination, and necessary for the proper interpretation of the will of the gods. It was both a divine insti-

¹ *Geschichte der deutschen Sprache*, pp. 980-986.

² *Prehistoric Antiquities of the Aryan Peoples*, pp. 254-257.

tution and a constant medium of divine communications. The site of Rome, as well as that of every other ancient city of Italy, was surveyed, limited, and consecrated on the basis of a scheme of sacred orientation, and every detail of the city's life from that time forward was based on the same method of ascertaining the divine will, by consulting the signs in the heavens and in the victims within the framework of orientation. This alone would make of orientation a distinctly archaeological subject. Orientation even determined on which shoulder a person should fasten his mantle!

What was true of Rome was also true in broad lines of Etruria, India, China, Persia, Assyria, the Hittites, and Babylonian.

An important consequence follows from whatever system of orientation was adopted by a nation. It is the association of luck, good fortune, good omen with the right or left hand. It has already been noted that for all peoples the source of luck and life was the east. Now, given the fact that the world was supposed to have a right and a left side, it followed that when a person took the proper ritualistic attitude, the side of him that was toward the east, whether it was his right or left side, was the lucky side. The non-recognition of this fundamental and obvious fact is what lies at the basis of the confusion in modern interpretation. No nation that faced to the south in all ceremonies could possibly consider the right side as lucky because that side was toward the west, the abode of death.

What was the grouping of ancient nations in regard to orientation? The following list is the result of my personal investigations and is entirely novel. I believe no such classification has ever been attempted.

SOUTHERN ORIENTATION AND LUCKY LEFT	{	Egypt	NORTHERN ORIENTATION AND LUCKY RIGHT	{	India
		China			Greece
		Babylonia			Jews
		Assyria			'Barbarians'
		Persia			Celts
		Etruria			Goths, etc.
		Italic tribes			
		Rome			

From this list it is clear that the common modern idea that the right side was universally considered lucky from the earliest times, is a fallacy to be relentlessly exploded. Strange as it may seem to us, who are the spiritual heirs of Greece, the word *sinister*

to the Romans meant lucky, and birds seen on the left, *sinistral* *aves*, were birds of *good* omen. The same birds seen in the same spot—that is, on the east side—by a Greek diviner would have been right-hand birds for him, and of course also lucky. He would have been facing north instead of south. In connection with the above grouping it is interesting to note two cases of contamination. One would expect the Jews to follow the universal oriental and Semitic system of the lucky left; whereas in the Old Testament are distinct traces of the lucky right,—a fact that suggests Hellenistic contamination. The second case is quite simple of explanation. It is the gradual substitution, under the Roman empire, of the Greek scheme of the lucky right, first among the literary class who made a fetish of Greek ideas, and then among the majority of cultivated persons, so that only in religious rites and popular belief was the old Roman system conserved.

Returning to the two opposing schemes of the groups mentioned above, can any reason be given for this difference of orientation? I think this is possible, but it is a rather speculative question, and I make here a purely tentative suggestion. As the direction of orientation is for the purpose of establishing communication between gods and men, we would naturally expect to find that in the group that faced south the idea was current that the gods came from the south into the world; while the north would be the source and abode of the gods for the other group. Now there is distinct evidence corroborative of this inference. In the southern group the earliest people whose literature furnishes us with material are the Babylonians. We cannot expect to get at rock-bottom reasons in such derivative civilizations as the Hittite, Etruscan, Roman, Assyrian, etc. If we turn, then, to Babylonian legend we find that the god Ea, who was usually regarded as the creator of human society—material, social and religious,—was considered to have manifested himself to mankind by rising up from the Persian gulf, at the southernmost boundary of Babylonia.¹ Communication between god and man was, therefore, thought by Babylonians to have begun in the extreme south. In races that borrowed an already developed ritual from Babylonia—such as the Assyrians, Persians, Hittites, etc.,—no such ultimate connection is needed. "Theirs not to reason why," theirs but to say,

¹ Jastrow, *Religion of Babylonia and Assyria*, p. 137 and *passim*; *Religious Belief in Bab. and Assyria*, pp. 88-89 and *passim*; *Die Religion Bab. u. Assy.* I, p. 125 and *passim*; Radau, *Bel, the Christ of Ancient Times*, pp. 9 ff.

"Aye, Aye." In the same way we find that the gods came to earth in the north according to the myths of India and Greece. Apollo came to earth in the land of the Hyperboreans when he descended from the empyrean and revealed god to man. For Vedic India the way to the gods is the northern route; and as they live in the north the mystic hypnotizes himself to follow this northern path to achieve union with the divine.

This leads directly to the solution that I believe I have found for the apparent confusion of ancient orientation. It is quite simple and can best be studied in the Roman field. The fact that among Etruscans and Romans we find the use of southern and western as well as of eastern orientation does not mean, as Bouché-Leclercq thought, that there were several systems, nor, as Wissowa suggested, that there was no system at all. On the contrary, it shows that there was an extremely rigid and elaborate system, more exact than anyone had imagined. The system was based on all three orientations: a celestial orientation to the south; a terrestrial orientation to the east; and a chthonic or infernal orientation to the west. They related respectively to the phenomena of the gods and the heavens; to the phenomena of mankind and the earth surface; to the phenomena of the spirits of the dead, the chthonic gods and the infernal regions. The three together covered the whole universe: the north was pure negation.

This triple orientation corresponds exactly to the three forms of the sacred *templum* used by Etruscans and Romans as we are informed by Varro (*L. L.* VII, 6-13) who says that there are three kinds of *templa*: that established by nature in the heavens, that marked out by auspices upon the earth, and that made by analogy (*i. e.*, to the heavenly) under the earth. The intimate connection between the *templa* and orientation is obvious, as the *templum* was based entirely on orientation. A *templum* is a consecrated area.

The three orientations might either be used in distinct separate ceremonies, or they might be combined in a single ceremony, being used in its different phases or periods. A shifting of the point of orientation to correspond to a variation in the scope of the ceremony is an exact parallel to the shifting of orientation in prayer during the course of the day or the progress of the liturgy, which we know to have been an early Roman custom. This shifting followed the course of the sun from east to west passing by the south: the sun-wise circumambulation.

While the Greeks did not lay nearly as much stress on orientation, we find among them a similar use of three orientations: a celestial orientation to the north; a lucky human orientation to the east; a chthonic and funereal orientation to the west.

The only orientations that were mutually exclusive in the Greco-Roman field were, therefore, the southern and the northern. They do not appear together. This appears, however, to have been a later development. In India, China, and Babylonia all four points of the compass were used for orientation: but as two of them were connected with death and the other life, it came to be felt, probably, that there was an unnecessary duplication and the west alone was retained to represent this side of ritual.

This association of ideas—in fact the entire scheme here outlined—is, I believe, peculiar to myself, and is here published for what is may be worth for the first time, though it was partly outlined in a paper read during the Christmas holidays of 1914. At that time I had not yet studied the question of Chinese orientation and had accepted some casual statements that in China the right hand was lucky, the left unlucky, and that the orientation was to the north and east. Since then I have been through the main Chinese classical texts and have not only found that with them orientation had an extraordinary importance but that it was based, contrary to the common statement by Legge and others, on the lucky left and on the southern direction. The material on Chinese orientation is not only large but perfectly clear. Another fact, which I have ascertained since reading the above paper, is that Egypt used the southern orientation.

The present paper is necessarily a brief synopsis of the facts, and will be expanded into a special volume which I have in preparation on the subject of ancient orientation.

EGYPT

In my examination of Egyptian texts I failed to find any data on orientation corresponding to those of China, Babylonia, India, and Rome. There were some indications of southern orientation, it is true, but in order to be sure I appealed to the great authority and wide acquaintance with the texts of Prof. James H. Breasted. I quote from his letter of March 25, 1915: "The situation with regard to right and left in Egypt is dependent on the Egyptian's orientation. He faced south, hence the left was the east, the residence of the leading sun-gods; and the right was the west the

kingdom of death." It pleased me that Professor Breasted should recognize so clearly the connection between orientation and the luck of right-left. So many modern writers have failed to do so and have thus obscured the issue.

The best examples of the southern orientation are furnished by numerous illustrations of the sun-boat. It moves from left to right, often with the sun-disk at the prow. It is needless to call attention to the fact that a sun-motion from left to right involves facing the south.¹

Similar are such sunrise scenes as that in the Papyrus of Ani of the Book of the Dead, Plate 2. The sun-disk upheld by the two arms of the emblem of life (Ankh), resting on the Tet is adored above by the six apes of the dawn and below by Isis, representing the dawn, who kneels on the left and by Nephthys, representing the sunset, who kneels on the right, respectively placed in front of the mountain of the east and that of the west.

Osiris, king of the underworld and of resurrection, is called "the first of the westerners," and while the west was the real abode of death, there are also traces that there was a similar association with the north. The Osiris boat faces in the opposite direction from the sun-boat, as is logical: it proceeds from right to left.²

In connection with the question of the lucky left it is interesting to note that Bes carries the young sun-god on his left and not on his right shoulder.³

But in view of the casual nature of the references to orientation, it is clear that this part of ritual had but slight interest for the Egyptian mind; and this seems strange when we consider how essentially material and formal was the Egyptian mode of thought. Still, such as it was, there is no doubt that whatever primary orientation existed in Egypt was southward, with the lucky left as a consequence.

CHINA

Ancient Chinese orientation appears to be a *terra incognita*. Dr. Jastrow was inclined, on the faith of a certain text, to attri-

¹ Mariette, *Denderah*, IV, p. 64. Budge, *Osiris*, pp. 62-65.

² Mariette, *loc. cit.* Budge, *op. cit.* pp. 73-77.

³ Consult for sun-boats, Osiris boats, upheld sun-disks and Bes, Lanzzone, *Dizionario di mitologia Egizia*; for Bes holding the sun-god, Wiedemann, *Religion of the Ancient Egyptians*, p. 164, fig. 48.

bute the northern orientation to China, and before I had myself studied the question, I provisionally adopted this suggestion. This would result, of course, in the lucky right and unlucky left, and in harmony with this supposition that great authority on Chinese religious literature, Mr. Legge, has emphatically stated that in China "the right was anciently the place of honour." Now, after examining, myself, page by page, the classic texts of ancient Chinese literature, I am able to state that both of the above statements are absolutely unfounded and the reverse of true: that (1) Chinese orientation was toward the south, and (2) the left hand was the place of honor and luck. Not only can this be deduced from numberless passages, but the theory on which these two customs are based is actually stated and explained. In fact there is no ancient literature in which orientation is as fully stated and exemplified as the Chinese. Furthermore, there is no people with whom orientation played a more important and a wider rôle. It is quite refreshing to be able to let the ancient spirit speak so clearly on its own behalf instead of being obliged, as we usually are, to offer our own deductions. And, furthermore, the ancient customs are even now followed in modern China.

An appendix to *Yi-King*,¹ the earliest of the Chinese classics, a treatise of geometrical mysticism, thus explains the southern orientation. After saying that god and all things issue forth in *Kan*, which is the east of the world, it states that they are then brought into harmony in *Sun*, which is the southeast. After that comes the culmination of life in *Li*, the south; for "Li gives the idea of brightness. All things are now made manifest to one another. It is the trigram of the South. The Sages turn their faces to the South when they give audience to all under the sky, administering government toward the region of brightness."

The interrelations of right and left with honor and fortune are quite fully explained in the bible of Taoism, the *Tao Teh King*.² This passage is the more important to quote in that it so clearly explains the connection of death with the west and the right hand, and in that it is at the same time an *apologia* for the Chinese hatred of war. "Now arms, however beautiful, are instruments of evil omen, hateful, it may be said, to all creatures. Therefore

¹ Appendix V, ch. IV, 9, in Legge, *Sacred Books of the East*, XVI, pp. 442 ff., especially p. 425.

² Legge, *op. cit.* XXXIX, p. 73; from Pt. I, ch. 31. 1. The date of the *Tao Teh King* is supposed to be the sixth century B.C.

they who have the Tao¹ do not like to employ them.—2. The superior man ordinarily considers the left hand the most honorable place, but in time of war the right hand. Those sharp weapons are instruments of evil omen, and not the instruments of the superior man; he uses them only on the compulsion of necessity. Calm and repose are what he prizes; victory (by force of arms) is to him undesirable. To consider this desirable would be to delight in slaughter of men; and he who delights in this slaughter of men cannot get his will in the Kingdom.—3. On occasions of festivity to be on the left hand is the prized position; on occasions of mourning the right hand. The second in command of the army has his place on the left; the general commanding in chief has his on the right;—his place, that is, is assigned to him as in the rites of mourning. He who had killed multitudes of men should weep for them with the bitterest grief; and the victor in battle has his place (rightly) according to those rites (*i.e.* of mourning)."

This passage has a bearing far transcending the borders of China. It can be used to explain the drinking customs of Greece and the funerary orientation of Greece and Rome.

The Chinese classic for ritual and ceremonial is the *Li-Ki* or Book of Rites. It is full of passages which show how the whole system was based on southern orientation and lucky left.

(1) The diviner, in the ceremony of consulting the will of heaven through the tortoise-shell, faced south. "Anciently the Sages, having determined the phenomena of heaven and earth in their states of rest and activity, made them the basis of the Yi (*i.e.* of divination by the tortoise). The diviner held the tortoise-shell in his arms, with his face toward the south, while the Son of Heaven (the Emperor), in his dragon-robe and square-topped cap, stood with his face to the north. The latter . . . felt it necessary to . . . obtain a decision in regard to his purpose . . . giving honor to Heaven (as the supreme Decider)."²

(2) The Son of Heaven, in ceremonies where he was supreme faced the south. "When a sage Sovereign stood with his face to the south and all the affairs of the Kingdom came before him, etc." In the imperial palace he gave audience in the Hall of Distinction where "the Son of Heaven stood with his back to the axe-embroidered Screen and his face toward the South."³

¹ The term *Tao* is not easy to define. It means the way or mode of being of the perfect soul and is close to the Buddhist absorption into non-being.

² Legge, *op. cit.* XXVIII, p. 233, from Bk. XXI, II, 25.

³ *Ibid.* XXVII, p. 111; XXVIII, p. 29, 61.

The same philosophy of southern orientation as in the *Yi King* is given in the *Li-Ki* when it says: "A ruler stood with his face toward the South to show that he would be (in his sphere) what the influence of light and heat was (in nature). His ministers stood with their faces to the north, so as to face him."¹

In speaking of primitive customs in the earliest ages of man it says (Bk. VII, 1, 7): "The dead are placed with their heads to the north, while the living look towards the south."² In the ceremony of the calling back of the soul after death, the persons calling stood with their faces to the north, inclining to the west: thus associating the two directions, with the stress on the north. It is interesting to note that Chinese orientation had its color symbolism according to the *Li-Ki*.³ For the east it was green, for the south it was red, for the west white, and for the north black. It seems fairly certain that the association of death with the north was primary and that those peoples who associated death with the west were either believers in the northern orientation or, like the later Romans, influenced by those who believed in it. For it could hardly fail to seem abnormal to the Greeks to associate the warm and life-giving south with death, as Vedic India did and as logic demanded that all north-orientationists should do. For India, as we shall see, the south was the abode of the dead. Greek imagination found in the dying western sun the excuse for casting aside this much of Indian cosmic symbolism.

The passage on which Dr. Jastrow based his idea that the Chinese oriented to the north belongs to the above class of death-orientations. It is a prayer to his dead ancestors by Chow-Kong. The other passage which Jastrow cites, refers to the fact that the Chinese compass points south, an interesting confirmation of southern orientation.

In the description of the Royal Palace in that other Chinese Classic the *Shu King*, the Annals or Book of History (cf. Ku Hsi), we see that from early times the palace faced south; that all its five gates opened to the south on the same axis; and that all ceremonies are based on southern orientation.⁴ It is still so in modern China. That near-classic and cornerstone of Confucianism, the book of Mencius,⁵ discusses the extraordinary fact that

¹ *Ibid.* XXVII, p. 423, from Bk. IX, 1, 14.

² *Ibid.* XXVII, p. 369.

³ *Ibid.* p. 328.

⁴ Legge's notes to the *Shu King*, *Chinese Classics*, V, p. 237 (Scribner).

⁵ Legge, *Chinese Classics*, II, p. 226, from Bk. V, II, IV, 1 (Scribner).

the great scholar Shun had "stood with his face to the south and Yaou, at the head of all the princes, appeared before him at court with his face to the north." The point to this is that Shun was supposed not to be emperor but only vice-regent, and that Yaou was emperor. And in this connection Confucius is reported to have said: "at that time in what a perilous condition was the Empire. Its state was indeed unsettled." In other words, so much importance was attached to this scheme of orientation that the kingdom was supposed to be at death's door if it was disregarded. But Mencius denies the inference and sets things right by pointing out that Shun was co-emperor at the close of Yaou's reign. In fact Yaou wished him to be his successor also in place of his own son. Therefore he had a right to face south.

Another classic collection, the *Shih-King* or "Book of Odes," being composed of poems, would naturally not contain as specific material. Still even here there are passages that bear out the same system. The left is always mentioned before the right, and so given the place of honor, as also in several passages of the *Li-Ki*.¹

Many corroborative details can be mentioned. The left was the place for the general and officers of any army, the right for the soldiers.² In feasting the cup with which the guest was pledged was placed on the left.³ In selecting the most honorable part of a sacrificial animal to be given away, it was the left quarter that was chosen.⁴ The bow was suspended at the left of the house door at the birth of a child, for his use when he grew up.⁵ When the child's head was shaved at the end of the third month a portion was left on the left of the boy's head, and on the right of the girl's—showing the greater honor given to the boy.⁶ In assigning positions at a gathering the men were placed on the left, the women on the right.⁷

¹ *Shih-King*, Pt. II, Bk. VII, Ode VI, 1 (Legge, *Chin. Class.* IV, 1, p. 395). Cf. Pt. II, Bk. VI, Ode X, 4; Pt. III, Bk. I, Ode IV, 2 (p. 443), Ode I (p. 428), and Ode III (p. 438); Pt. VII, Ode VI. See also the translation in *Sacred Books of the East*, III; Dec. II, Ode VIII (p. 326); *Lü*, Ode III (p. 339); Minor Odes, Dec. VI, Ode VII (p. 371); Dec. VII, Ode VI (p. 374); Major Odes, Dec. I, Ode VIII (p. 326), and pp. 378, 383.

² *Li-Ki*, Bk. XV, 39 (*Sacred Books of the East*, XXVIII, p. 77).

³ *Ibid.* Bk. XV, 42 (XXVIII, p. 78).

⁴ *Ibid.* Bk. XV, 54 (XXVIII, p. 81).

⁵ *Ibid.* Bk. IX, I, 17 (XXVII, p. 424).

⁶ *Ibid.* Bk. X, I, 20 (XXVII, p. 473).

⁷ *Ibid.* Bk. XXXI, 10 (XXVIII, p. 368).

Many more passages might be quoted especially from the *Li-Ki*, the official book of ceremonial, but these are more than sufficient for my present purpose.

BABYLONIA AND ASSYRIA

The Babylonians practised the Southern orientation. This fact, denied by Kugler¹ was clearly demonstrated by Dr. Jastrow in his paper on "Babylonian Divination,"² the main points of which I shall recapitulate. The Babylonians divided the heavens into four regions, and the order in which they are enumerated is: south, north, east, and west, showing that the division was made while facing the south. In the application of this division to the earth, the same fact is evident. The southern section is identified with Akkad, or Babylonia, which is first mentioned and in fact occupied the south and central part of the universe to the Babylonians. The east section or Elam is connected with the left; the west section or Amurru (Syria) with the right; while Subarti (later Assyria) is the north and rear. The same idea appears when, for purposes of divination, the right horn of the new moon is connected with Amurru or the west and the left horn with Elam or the east. The division of the belt of the Ecliptic into three sections,—that in the centre relating to Babylonia, that on the left to Elam and that on the right to Amurru,—is also based on southern orientation.

Several other straws show which way the orientation wind blew. In the enumeration of the four winds in the divination material the south wind is named first. The order is, as in the four heavenly regions: south, north, east, west. In the same way the months and days of the year were connected with the four regions on the basis of the southern orientation, because it was the south or Babylonia that was associated in each case with the first, the fifth, the ninth, etc. While there was this "orientation of the heavens from the south for astrological purposes" there was also "a second orientation from the east" for the purposes of the cult; a custom in which Etruria and Rome were in harmony with Babylonia. What Dr. Jastrow does not mention in this article,

¹ *Sternkunde u. Sterndienst in Babel*, pp. 23, 226.

² *Zeitschr. f. Assyriologie*, XXIII, 1909, pp. 196-208. Cf. his *Die Religion Babyl. u. Assy.* I, p. 324 ("the stars of the south, north, east and west"), and p. 292: quotations from the Schurpu incantation tablets. The winds in the same order used as weapons by Marduk in the creation epic: Jastrow, *Religion of Babyl. and Assy.* p. 426.

but what is plain in Vol. II of his "*Religion*,"¹ is that even in some divination ceremonies, such as omens from consecrated oil and water, the eastern orientation was in use. It seems to me that the explanation of this fact is that the signs are, in this case, not sought in the heavens and therefore are not governed by the heavenly orientation, but by earthly orientations. This is a question that I am treating elsewhere and can now only allude to.

A word, now, as to the probable reason for the southern orientation of the heavens. Dr. Jastrow considers it rather difficult to furnish: he suggests that "all the larger and more important constellations being in the south, this region of the heavens would suggest itself as the natural direction to which to turn for purposes of observing the signs in the heavens." I have suggested another explanation based on Babylonian religion and cosmology itself and on that of its offshoots in Etruria and Rome. For them all the south was the bottom of the world and the north was its top. Now the creation myths of Babylonia make the world originate in water, in the humid abyss: the creator and civilizer of man is in some traditions Mummu or Ea, the god of the deep, who came as a fish-man, out of the waters of the Persian gulf at the extreme south. He it was who gave civilization to man. The world and the gods, man and culture began in the southernmost, lowermost parts of the earth. Here the cosmos emerged from chaos. It was here that god and man came together. Toward this point man must turn when he is studying the cosmos. The word for north, *iltanu*, which means the *lofty region*, shows that the "upper pole" was at the north. When the flood carried the ark to the highest mountain, it was to the mountains of Armenia, which was the upper part of *Subarti*, the region of the north.

Thus far Dr. Jastrow and I are in agreement, but we split when it comes to the relation of luck to right and left. Evidently Dr. Jastrow does not see the principle underlying the relation between orientation and luck: is prevented from doing so by the mistaken idea that all nations of antiquity, including of course the Babylonians, believed the right lucky and the left unlucky. It is a pity that he was unaware of the commonly understood fact that Etruria and Rome held the opposite theory, because, had he known of this material, believing as he did in the dependence of Etruria on Babylon in the field of divination, he would have probably divined the truth.

¹ *Die Religion Babyl. u. Assy.*, II, *passim*, especially p. 763.

My first instance of the preëminence of the left in Babylon will be from the most famous of early Babylonian legends, the epic of the solar hero Gilgamesh. He had excited the deadly enmity of the great goddess Ishtar and so the gods created as his rival the strange wild man, Heabani. But from enemies they became sworn friends and Heabani was brought by Gilgamesh to his imperial capital Uruk and seated by him in the place of honor on his *left* hand. This fact has not, I believe, been noticed.¹ To quote from Jastrow's summary: "Shamash [the Sun-god] and Gilgamesh promise Eabani royal honors if he will join friendship with them.

Come and on a great couch,
On a fine couch he [i.e. Gilgamesh] will place thee
He will give thee a seat to the left.
The rulers of the earth will kiss thy feet.
All the people of Uruk will crouch before thee."²

A peculiarity common to all nations seems to be to mention the most honorable of two things first, and so we find in Babylonian, as we did in Chinese, texts that the left is mentioned before the right. For instance when the ordering of the heavens and the stars is spoken of in the Creation Tablets it is said that the solar god Marduk opened great gates for the sun (Tablet V, lines 9-11):

He opened gates on both sides [of the ecliptic],
A lock he made strong on the left and the right,
In the midst thereof he placed the zenith.³

In the legend of the Deluge, the god tells the Babylonian Noah, Ziugiddu, to come and stand on his left side,⁴ and when the onslaught of the god Merodach on the dragon Tiamat, is described his horses are said to rush forward to left and right.⁵ In the very primitive Sumerian tablet in the University of Pennsylvania collection, translated by Dr. Langdon, the left is also mentioned first.⁶

¹ Haupt, *Nimrodepas*, p. 15, II. 36-39.

² *Religion of Babyl. and Assy.*, p. 480.

³ King, *History of Sumer and Akkad*, p. 78. Barton, *Archaeology of the Bible*, p. 244.

⁴ Barton, *op. cit.* p. 280.

⁵ Barton, *op. cit.* p. 242.

⁶ See *N. Y. Sun* and *N. Y. Times*, Aug. 15, 1915. Barton, *op. cit.* p. 286.

There are hundreds of examples in the literature of divination published by Dr. Jastrow¹ in his splendid *corpus*, which abundantly prove my theory of the lucky left and unlucky right to lie at the basis of Babylonian divination. I can quote only a few samples selected at random from the various classes of omens.

(1) BIRTH OMENS (Jastrow, II, pp. 919 and 931)

- | | |
|--|---|
| (a) If a woman bears a child lacking its <i>left</i> ear, the life of the king will be prolonged. | (b) If a woman bears a child lacking its <i>right</i> ear, the ruler will die. |
| (a) If a queen bears a child with six fingers on its <i>left</i> hand the king will plunder the enemy's country. | (b) If a queen bears a child with six fingers on its <i>right</i> hand the enemy will plunder the king's country. |

(2) OMEN FROM ANIMALS (Jastrow, II, p. 826)

- | | |
|---|---|
| (a) If a scorpion bites a man's <i>left</i> buttock, his adversary will sit on the mourner's bench. | (b) If a scorpion bites a man's <i>right</i> buttock, he will himself sit on the mourner's bench. |
|---|---|

(3) OMEN FROM THE HEAVENS (Jastrow, II, p. 672)

- | | |
|--|---|
| (a) If the planet Lu-Bat is seen near the <i>left</i> horn of the crescent moon the king [of Babylon] will dominate. | (b) If the planet Lu-Bat is seen near the <i>right</i> horn of the crescent moon the land will be devastated by the Westerners. |
|--|---|

(4) OMENS FROM THE VICTIM'S LIVER

I—Gall Bladder (Jastrow, II, p. 337)

- | | |
|--|--|
| (a) If the gall-bladder is split below on the <i>left</i> , misfortune for the enemy's army. | (b) If the gall-bladder is split below on the <i>right</i> , misfortune for my army. |
|--|--|

II—Finger, *Processus Pyramidalis* (Jastrow, II, p. 393)

- | | |
|--|--|
| (a) If the finger is shaped like a lion's ear and its rear part is destroyed on the <i>left</i> , the army of the ruler will be without a rival. | (b) If the finger is shaped like a lion's ear and its rear part is destroyed on the <i>right</i> , the enemy's army will be without a rival. |
|--|--|

III—Liver-gate (Jastrow, II, p. 365 and *Rel. Babyl.* p. 183)

- | | |
|---|--|
| (a) If the liver-gate is crushed on the <i>left</i> side and torn away, the enemy's army will be in terror. | (b) If the liver-gate is crushed on the <i>right</i> side and torn away, the ruler's army will be in terror. |
|---|--|

IV.—Hepatic Vein (Jastrow, II, p. 382)

- | | |
|---|---|
| (a) If the Hepatic vein is defective on the <i>left</i> , downfall of the enemy's army. | (b) If the Hepatic vein is defective on the <i>right</i> , downfall of my army. |
|---|---|

¹ *Die Religion Babyloniens und Assyriens*, 2 vols. in 3 parts, Giessen, 1905-1912.

It is hardly necessary to say that in these omens what is misfortune for the enemy is good fortune for the ruler who is asking for the omen and for his country. I think the above samples from an abundant divination material will seem sufficiently conclusive.

The adoption by Assyria of the Babylonian system of divination was wholesale and complete, as can be seen by a number of documents of Assyrian date, but the unimaginative Assyrians added nothing: they were simply imitators.

PERSIA

It is interesting and puzzling to find, quite unexpectedly, that ancient Iran held ideas diametrically opposite to those of Vedic India in the matter of orientation. Iran aligns herself with Babylon and Assyria on the side of the south and the lucky left. I have been unable to find any reference to the Persian theory in modern writers, and in my pioneer examination of the original sources I may well have overlooked some material. But, what I have found, though scanty, is conclusive. It may be arranged in the order of the Zoroastrian epic of creation and revelation and the ordinances of ritual, the early texts being supplemented by the later Pahlavi material. The basal concept is the dualism of good and evil, represented by Ahura Mazda and Ahriman. The heaven of Ahura Mazda is reached from the Kinvad Bridge at a peak in the centre of the world from which one passes up to the star station, the moon station, the sun station, and on to the endless light—the four grades of heaven. The fullness of light is southward and in the south is Paradise.¹ Hell, the abode of Ahriman and his hordes of demons, is in the extreme north, and from the north they rush forth whenever they plan evil to the world.²

When Ahura Mazda began his creative activity he first produced two beings that strongly resemble the Platonic prototypes: (1)

¹ The warm south is the region of paradise; Yasht, XXII, 7: See Darmesteter, *Zendavesta I, Sacred Books of the East*, IV, in note to Vendidad, Farg. II, 10.

² The Bundehesh clearly places hell in the north. See Darmesteter, *Zendavesta*, I, p. 75; II, p. 323; IV, p. 2; as do also passages in the Vendidad and other texts quoted in Jackson's paper, referred to below. Cf. Geldner, *Studien*, I, p. 113; Kuhn's *Zeitschrift*, XXV, pp. 505 and 526. An elaborate description of it occurs in Dádistan-i-Dinik, ch. 33; see *Pahlavi Texts*, II, pp. 74 ff; in *Sacred Books of the East* XVIII.

Gayomard, the type and source of the humanity that was to be; (2) the Divine Ox, the source of all the varieties of animal and vegetable life that were to be. At once Ahriman produced corresponding evil and destructive forces, and rushed from the north to destroy Gayomard and the Ox, who had to die in order that from their seed the varied world of nature might come into existence through sacrifice. In dying Gayomard fell to the *left* side and the Ox to the *right* side. This simple fact shows two things: (1) the superiority of the left over the right, and (2) the fact that the right and left here referred to are the right and left of the world,—an absolute and not a relative orientation.¹

After a slow death, the primeval Ox becomes the Ox-soul, which is translated to the moon and becomes the fertilizing source of all life on earth except man.²

The earliest embodiment of Gayomard on earth seems to have been a mythic hero named Yima, the first to receive the revelation of Ahura Mazda who gave him his golden seal and poniard and so conferred upon him dominion over the earth. After a while Ahura Mazda orders Yima to increase the size of the earth, which had become too small for the growing flocks, herds, and men. "Then Yima, resplendent, stepped forward *Southward*, on the way of the sun; then pressed the earth with the Golden Seal and stabbed it with the dagger saying: O Genius of Earth, Spenta Armaiti, kindly part asunder and stretch thyself afar, to bear flocks and herds and men." This process Yima repeated, three successive times, at intervals of 600 and 900 years. Stabbing the earth with the sacred dagger to give increased life has its counterpart in Mithra stabbing the bull, *i.e.*, the fertile earth.

Then came, after some ages, the revelation to Zoroaster or Zarathustra. When Zarathustra went forth in search of wisdom he travelled ever southward and on the completion of his thirtieth year he was met by Vohumano, the incarnation and agent of Ahura Mazda, coming from the southern quarter, who in seven conferences completed Zarathustra's initiation and instruction. Ahriman, of course, seeks to destroy Zarathustra and "from the northern quarter forth rushed the deadly evil spirit," but in vain.³

¹ Zendavesta, Vendidad, Farg. I, for the creations by Ahura Mazda and Ahriman, and Farg. II, for the progressive enlargements of the Earth.

² Darmesteter, *Zendavesta*, *ibid.* II, 9-10, *Sacred Books of the East*, IV, p. 13.

³ Zendavesta, I, Vendidad, Farg. XIX.

So it was with succeeding teachers; when for instance Zarathustra had passed away after preaching to Vistasp, the arch-angels "let the soul of Srito pass from the light (of supreme heaven) to the earth and the soul of Vistasp went from him into the light to meet it. Vistasp proceeded on to the propitious South." Then the attack: "there came the most horrid of demons from the horrid northern quarter, etc."¹

It is the same with the soul when it leaves the body of man after death. At once the evil drug springs forth from the north to seize it; and to exorcize this drug an exorcism was repeated such as this: "Thou perishest away to the regions of the north never more to give unto death the living world of the Holy Spirit."²

Passing to the field of purely human action, we find that in imitation of the threefold proceeding of Yima toward the south in enlarging the world, any man about to enter on any new enterprise must needs go through a ceremony to ensure its success which involved taking three steps southward and reciting an *Ahuna vairya* or special prayer.³

This southern orientation, as might be expected, lies at the basis of the religious ritual. The positions of the five main priests and their three assistants were exactly oriented within the ceremonial area. The High Priest was called Zoti. He stood at the north end, in the centre, facing south. Opposite him, at the south end, in the centre, and facing the Zoti was the priest called Sroshavarz, who had the oversight of all details. The others occupied the four corners and the centre of the east and west sides, and had charge respectively of the sacred Hô-morter, of the material for feeding the sacred fire, of the religious utensils, of the water, and of the washing.⁴ In beginning the ceremony the Zoti priest takes three steps—again the Yima symbolism—"from the Earth to the Sun station." That is to say he proceeds southward toward the fire altar.

¹ For the subject of the Persian hell in the north consult Jackson's article in *Proceed. Am. Orient. Soc.* 1885, pp. 60-61, with references to Vd. VII, 2; VIII, 21; XIX, 1; Bushyanta Yt. XXII. 42; IV, 9.

² Darmesteter, *Zendavesta*, II, 47, in *Sacred Books of the East*, XXIII.

³ Darmesteter *Zendavesta*, I, 263, in *Pahlavi commentary on Vendidad*, II, 16.

⁴ *Sacred Books of the East*, XXXVII, *Pahlavi Texts*, Pt. IV, p. 262, from Dinkard, IX, 6 (cf. Visp. III. 1; Vend. V, 58; VII, 17, 18) and p. 293 from *id.* IX, 43, 7.

What is most striking in the above material is not merely the consistent use of the southern orientation but the absence of any trace of a subordinate and coördinate eastern orientation such as we find in other nations. But I am positive that there must be in Persian literature traces of eastern orientation and that a more careful examination will eventually bring them to light. The lack of emphasis on the east may be a sign of primitive character: the recognition of the lucky left implies, in any case, a cult of the East.

This completes the group of Eastern peoples who followed the practise of southern orientation and lucky left.¹ The next people to be discussed, the Etruscans, show how this theory was brought from the east to the west.

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PRINCETON,
January, 1917.

¹ While I am inclined to believe that the Hittites also belonged to this group, I have not sufficient concrete proof to warrant a positive assertion.

THE PLATE WITH SEVEN LOAVES AND TWO FISHES
ON THE GREAT CHALICE OF ANTIOCH

In my preliminary paper on the chalice from Antioch I merely alluded to the remarkable object above the head of the Lamb without giving any further description, hoping to return to the subject at an early date. The plate and its interesting contents cannot possibly be studied from the published reproductions,¹ nor can all the details be obtained from a single photograph, but only from a comparison of several taken in different lights. The plate is supported by the head of the Lamb, but is represented as seen from above, while the Lamb is seen in profile. This is evidently done to give a view of all the objects on the plate, which never could have been shown, if the plate had been presented in profile. Half of the objects would then have been lost. The nature of the plate and its contents does not reveal itself at first sight, and prolonged study is necessary before the significant details can be surely determined.² The difficulty of recognition is increased by the fact that the plate and the fishes must be studied with the photographs turned upside down as well as in their natural position.

The plate (Fig. 1) is situated above the head of the Lamb and to the left of the hand of the seated Christ. It is apparently circular, but only the lower and right edges are shown. At first the lower edge was thought to be a crescent, and this illusion was only dispelled when the right side was recognized. The upper and left edges of the plate are concealed by the two fishes. One fish is placed horizontally over the upper edge, and the other perpendicularly over the left edge of the plate. The upper fish lies with its head toward the seated Christ, the other with its head downwards. Both fishes turn their backs to the

¹ *A.J.A.* XX, 1916, pl. XIX, and p. 430, fig. 1.

² A correspondent to whom I had sent a photograph positively asserted that the object was not a plate "but only a bunch of grapes." The mistake is pardonable as it took the writer months of study before the object was finally identified with certainty.

centre of the plate. The fishes are of two different kinds. The upper one is more slender with the front part only slightly enlarged. Its mouth is slightly open, and sigmoid in profile. The mouth of the second fish is wide open, and now slightly worn. The body is thicker toward the head, tapering toward the rear and turning slightly upward. The tail of the upper fish

is distinctly forked. That of the other is too indistinct for accurate description. The eye of each fish is distinct.

In addition to the two fishes the plate contains seven loaves of bread. The loaves are circular and in size larger than the grapes with which they

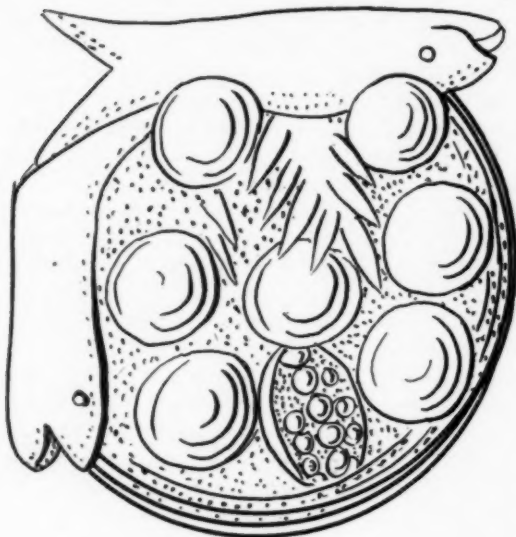


FIGURE 1.—THE PLATE ENLARGED SIX DIAMETERS

have been confounded. They form a group with one loaf in the centre and three on each side. Between the two lowest loaves is a wide space, almost the size of a loaf, which is occupied by an object which puzzled me for a very long time, and which, I confess, is not yet identified beyond all doubt. In outline it looks like an oval loaf of bread. But from its upper left centre to its lower right, runs diagonally a row of about five distinct beads, to the right of these seems to be another row of smaller beads, and possibly some stray beads besides, thus three rows in all. On the left side of the object is a short curved ridge. I think this object is not a loaf of bread cut open but a *head of wheat* placed between the loaves either in order to show that the

objects are wheat loaves and not large grapes, or, as a prominent theologian has suggested to me while discussing the subject, because the wheat has reference to the Eucharist. The limits of this paper, however, require any theological discussions to be deferred to some other time.

There yet remains one more object on the plate to describe. Between the two uppermost loaves, extending from the upper left to the lower right, ending at about the central loaf, is a sprig with branches or leaves projecting at either side. I think the whole is either an immature head of bearded wheat, which the artist added to show the nature of the seven round objects, or the tip of a palm branch. Possibly some other explanation may be found later.

An object very similar to the one with the grains is seen on the "mould for sacred cakes" described by Arthur J. Evans in 'Recent discoveries of Tarentine terra-cottas,' *J.H.S.* VII, 1886, p. 45, fig. 6. The resemblance is most striking, although the artist of the mould had room to add the bristles of the grains on either side, for which on our plate there seems to have been no room, or which have been worn away, if they once existed. The latter is improbable.

As to the interpretation of the whole plate, archaeologists and theologians will probably differ for some time to come. The older school will contend that the plate refers only to the miracle of feeding the multitude, while the followers of Wilpert will see in this plate, with its undoubtedly, most sacred objects, the earliest representation of the Eucharist, and will no doubt find their theory much strengthened by its appearance on the chalice. It may also be pointed out that the representation of the fishes on this plate could not have been due to the popular anagram of the *Ixθvs*, which seems to be several years later than the ornaments of the chalice; while the earliest fish symbols in the paintings of the catacombs, are evidently several years later than the invention of the anagram, which is generally dated in the time of Domitian.

It is interesting to note that while the plate contains *seven* loaves, there is also represented on the chalice a basket with *five* loaves. The multiplication of the loaves for the four thousand and for the five thousand are thus recognized as distinct miracles.

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A NOTE ON THE GREAT CHALICE OF
ANTIOCH

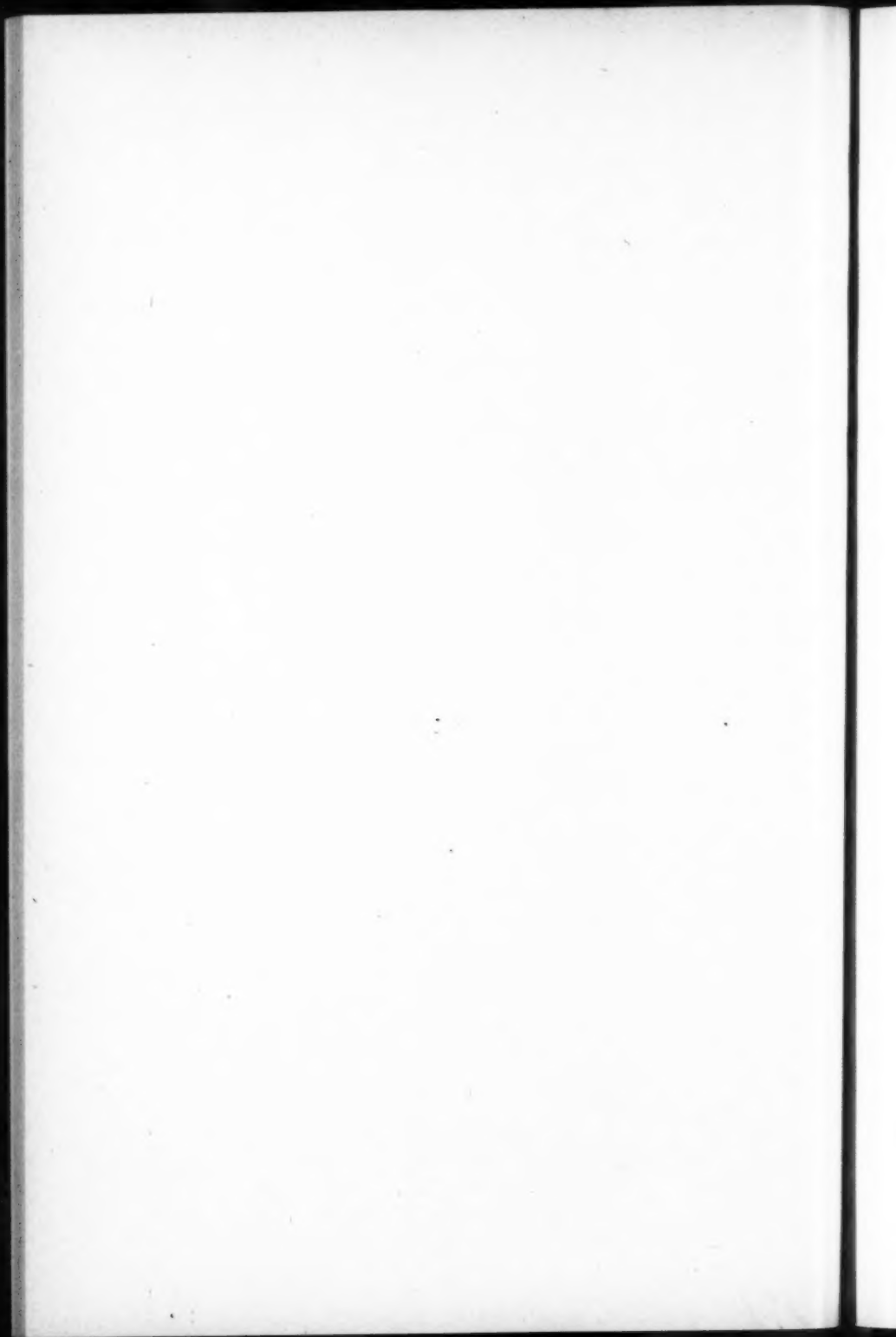
WITH regard to the remarkable relic, described by Dr. G. A. Eisen in *A.J.A.* XX, 1916, p. 426, I would offer the following note. The theme of the vine, which so beautifully decorates the exterior of the chalice, is of course an appropriate symbolism for the eucharistic cup. But further it is in striking correspondence with and in illustration of the opening sentence in the Eucharistic Prayer in the *Didache* (9, 2), which reads as follows: *Εὐχαριστοῦμέν σοι, πάτερ ἡμῶν, ὑπὲρ τῆς ἁγίας ἀμπέλου Δαβὶδ τοῦ παιδὸς σου.* This reference to the "Vine of David" is, as the commentators note, mystical, and may refer to the Church, to Christ himself as the Vine, and, as on our chalice, to the eucharistic wine. As the *Didache* is without doubt Syrian, according to some Antiochian, and of first century origin, the chalice pictures the opening theme of the Eucharistic Prayer used by the primitive Church in that region and in the same age, for Dr. Eisen attributes the relic also to the first century.

I would further suggest that the whole symbolism of the design is Jewish, and that it is specifically drawn from the 80th Psalm, with its parable of the Vine, which is Israel. This suggests itself to me from the representation in Figure 1 of a beast at the foot of the design, probably referring to v. 13 of that Psalm: "The wild boar out of the wood doth ravage it." Possibly also the sheep beside the figure of the Lord may represent the opening theme of the Psalm: "Thou, Shepherd of Israel, that leadest Joseph like a sheep." But the symbol of the Lamb of God may be more patent, except that otherwise no symbols are used with the figures. A further Jewish trait may be found in the twelve figures, of which two represent the Lord, as a youth and as a man, so that they do not stand for the twelve Apostles. But they may represent the twelve Tribes, for according to ancient tradi-

tion Christ was descended from both the tribes of Judah and Levi, the latter through his mother. In subsequent apocrypha there were many attempts, *e.g.* in Syriac and Ethiopic literature, to identify the Apostles with the twelve Tribes.

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UNIVERSITY OF PENNSYLVANIA
January 20th, 1917.



GENERAL MEETING OF THE ARCHAEOLOGICAL INSTITUTE OF AMERICA

DECEMBER 27-29, 1916

THE Archaeological Institute of America held its eighteenth meeting for the reading and discussion of papers at Washington University, St. Louis, December 28, 29, and 30, in conjunction with the American Philological Association and the College Art Association of America. Three sessions for the reading of papers were held and there were three joint sessions, two with the Philological Association and one with the College Art Association. The abstracts which follow were, with few exceptions, furnished by the authors.

THURSDAY, DECEMBER 28. 9.30 A.M.

1. Professor Martin Sprengling, of the University of Chicago, *Specimens of Arabic Poetry, Mediaeval and Modern, in English Translation.*

No abstract of this paper was received.

2. Professor Leroy Waterman, of the University of Michigan, *The Marriage of Hosea.*

The prime importance of the first three chapters of Hosea lies in the possibility of finding in them the highest ethical contribution of the religion of Israel. The commentators, however, have never been able to agree with respect to the meaning of the prophet's marriage, although upon this the religious teaching of the section absolutely depends. There have been two classes of interpretations according as the account has been conceived as dealing with fact or fancy. Those who have considered the narrative as based on fact have not been able to agree how the facts should be interpreted. A large number regard the account as a later interpretation by the prophet of an earlier experience. Others explain it as a direct command to the prophet. Both are open to criticism in their present form. The latter as the most recent development in the interpretation of Hosea is more particularly discussed in this paper. The solution here proposed is that Gomer's unfaithfulness does not consist in ordinary adultery but in the practice of licentious rites in pursuance of the popular religion. This then constitutes the basis for the prophet's domestic tragedy, out of which comes a higher ethical and religious truth

This involves a reconstruction of the narrative and an attempt to restore the corrupt verse 3:2, out of which comes a suggestion as to Hosea's place of residence and as a partial confirmation of it, the problem of the prophet's southern origin is discussed.

3. Professor George L. Robinson, of the Chicago Theological Seminary, *Where Archaeological Investigation left off in Palestine and Assyria.*

During the season of 1913-14, the Jews under the general supervision of M. Clermont-Ganneau and the immediate direction of Captain Weill, excavated a considerable portion of the hill south of the Temple Area at Jerusalem, known as Ophel, which they had purchased, and discovered among other things: a tower with rock-cut foundations—possibly once the tower of Siloam, —certain cave tombs with oval roofs, a cistern with Roman baths, a Greek inscription which tells of a synagogue, an inn, and a bath as once standing near by, and most important of all an underground rock-cut aqueduct, running parallel to, and probably older than that of Hezekiah, which conducts the water of Gihon to the Pool of Siloam.

As late as May 1914, Prof. E. Sellin formerly of Vienna, assisted by Drs. Proeschniker and Grohmann, was engaged in excavating the mound called Balata, situated about one mile east of Shechem and 200 yards west of Jacob's well. Dr. Macalister had formerly suggested the identification of this Tell with Sychar, but the Austrians now believe that here they have laid bare the true site of ancient Shechem. They discovered foundations of ancient Hebrew houses, a portion of the old city wall of the Amorites, which was thick and oblique, the ruins of a palace, and most noteworthy of all a great triple gateway—the longest yet excavated in Palestine—on the west side of the city. Not far from the Tell, also, an Egyptian sarcophagus was found which is considered to have been Joseph's. It is now in the Munich museum.

Messrs. Woolley and Lawrence, under the direction of Dr. Hogarth for the British Museum, had partially excavated at an expense of \$50,000, the hill of Jerablus (ancient Carchemish) on the Euphrates, an important centre of ancient Hittite civilization. The discoveries included Hittite inscriptions; stone deities, for example, a bearded god seated on a heavy base supported by two lions, thought to belong to the eighth century B.C.; three large gateways, on the inside of the court of one of which were dadoes from five to six feet high, with sculptured slabs of alternating black dolerite and white limestone adorned with carved figures of bulls and horses and chariots in Hittite style; broad steps extending for a hundred feet or more up the face of the acropolis, on the summit of which are the ruins of a great Roman temple and of a palace of Sargon II; and, especially important, a long Hittite text—the longest known, it is claimed,—unfortunately not as yet deciphered. The excavators confessed their embarrassment at not being able to read the Hittite inscriptions which they had found. Perhaps the decipherment of this hitherto unknown tongue by Dr. Figulla of Berlin, and Prof. Hrozný of Vienna as reported in the *Mitteilungen der deutschen Orient-Gesellschaft zu Berlin*, of December 1915, will be of assistance to them after the war.

4. Professor G. W. Elderkin, of Princeton University, *A Helmeted Head of Athena*.

The Princeton head of Athena is a gift by Mrs. A. H. Joline of New York City who acquired it in Rome. The height of the fragment is 33 cm., the head being somewhat under life-size. It has sustained several injuries. The lower end of the helmet, the nose, and the left half of both lips were broken off. Enough remains of the helmet to show that there was no crest. The sharper accents of the left side and its greater corrosion suggest that the head was set close to a wall with the left side turned out and that it may be a fragment of a gable group. The style presupposes the art of Praxiteles with his softer treatment of details. This is particularly noticeable in the eye where the transition from eye-ball to lid is barely perceptible. The corners of the mouth seem hard in the front view, but this hardness disappears when the head is seen in profile. The work is to be dated near the end of the fourth century, B.C.

THURSDAY, DECEMBER 28. 2.30 P.M.

1. Mr. Garrett Chatfield Pier, of Greenwich, Connecticut, *The Art of the Priest Eshin*.

The art of most early Chinese and Japanese painters lacks personality, but such is not the case with that of Genshin, or, as he is better known, Eshin Sozu. He was born at Yamato about 942 A.D., spent his early life in a monastery on Mount Hiei, and his later years as Abbot of Yogawa, where he wrote his treatises on Buddhism consisting of more than one hundred volumes. Among these was the famous *Ojo-Yoshu*, or *Entry into Paradise*. He died in 1017 after a life of achievement. Eshin excelled in both painting and sculpture, following as models the work of Chinese artists of the eighth century. Not much is known of his sculpture, but from his paintings one may gain a true appreciation of his artistic ability. He delighted in representing landscapes, waterfalls, or hills and valleys with blossoming cherry trees, and at the same time the tranquil figure of Amida, perhaps accompanied by Kwannon and Seishi, or surrounded by a retinue of angel musicians. His technique differed from that of the Chinese painters of the early Tang period in that he used cut gold leaf, sometimes superposed upon gold. Thus the flesh of his figures appears in flat gold leaf while the drapery is composed of gold leaf with minute arabesques. The gold was attached to the silk background with glue, the fine details such as folds of drapery sketched in, covered with glue and minute hair lines of gold applied. Different shades of gold were also used. Judged by his works, especially those representing Amida, Eshin must be ranked high among the great oriental painters.

2. Professor Charles C. Torrey, of Yale University, *The Art of the Hairdresser in Ancient Babylonia*.

The Semites in Old Babylonia, men as well as women, seem always to have worn their hair long. The men wore long beards, but the upper lip was often shaven. Implements for curling or "waving" the hair, similar to our curling-irons, seem to have been used in Babylonia, as they were also in Greece and

Rome. The Sumerians appear on the monuments with their heads shaven from crown to chin. The pictures of gods, to be sure, are furnished with long hair and beards; and there are a few other exceptions. These representations reflect in part actual customs of personal adornment and in part religious conventions. It does not yet seem possible to formulate satisfactory rules for the interpretation of all the material thus far known. One of the most familiar conventions is that employed in the representations of the hero Gilgamesh, whose curled locks are unlike those pictured on any other human or divine being. There are two or three distinct variations, beginning in the most ancient period. The braided or twisted queue falling down the back was always the favorite mode of hairdressing for women; but there were many ways of treatment. On some of the oldest Babylonian cylinder seals the hair of the female figures is looped behind the head in a loose knot which is singularly hideous. At a somewhat later period, not far from the time of the first Sargon, gods and human beings, both men and women, are shown with the hair knotted in a peculiar and rather simple style which later becomes more complicated. Numerous distinct styles of knots and other varieties of coiffure can be connected with certain periods in the history of old Babylonia, the cylinder seals providing the most important material. Conservatism and conscious archaism in glyptic art, however, doubtless preserved some modes which had disappeared from actual use. One of the most characteristic examples is the elaborate knot, sometimes almost like a figure eight, which seems to have come into fashion at about the period of Gudea. All the most interesting styles of hairdressing belong to the older periods of Babylonian history. With the Assyrian period there came in a single stiff and rather heavy style which became conventional on the monuments of all Western Asia. In the art, at least, we have from this time on a comparatively uninteresting uniformity, in this particular, in Babylonia, though there was doubtless considerable variety in the fashions actually current from one period to another.

3. Mr. Kenneth M. Chapman, *Cave Pictographs of the Rito de los Frijoles, New Mexico*. Read by Professor Mitchell Carroll.

No abstract of this paper was received.

FRIDAY, DECEMBER 29. 9.30 A.M.

Joint Session with the College Art Association of America

1. Professor John Pickard, of the University of Missouri, *The History of Art in Colleges and Universities*.

No abstract of this paper was received.

2. Professor David M. Robinson, of Johns Hopkins University, *Some Greek Vases at the Johns Hopkins University*.

This paper, illustrated with nearly fifty slides, gave a rapid survey of the vases which are now exhibited in the archaeological museum of the new quarters of the Johns Hopkins University at Homewood. Many of the vases belong to the reader of the paper, and others to the Baltimore Society of the Archaeo-

logical Institute. They range in date from 2500 B.C. down to late Roman times. There are specimens of Minoan and Mycenaean wares, many geometric, proto-Corinthian, and Corinthian vases, black-figured and red-figured hydriae, amphorae, craters, lecythi, and cylices, white Athenian lecythi, Etruscan vases, Roman vases, especially an oenophorus, fragments of Arretine ware, etc. There are signed vases by Nicosthenes, Xenocles, Epictetus (the only one in America), Phintias, Talaus, others in the style of Chachrylion, the Panaetius master, and Macron. Especial attention was called to an important archaic hydria which has on the shoulder a unique representation of the chasing of Perseus by two Gorgons. Athena, without attributes, and Hermes are present, and a running snake is represented beneath Perseus.

A cylix by Xenocles shows a Hippalectryon, a combination of horse and cock, not a big cock as the Greek lexicographers say. Its origin is not to be sought in Aeschylus, who probably did not introduce the monster into his plays. It was known to artists much earlier and had a magic, apotropaic quality. The idea came from Ionia where the Mycenaean tendency toward fantastic combinations of human and animal forms survived.

A black-figured lecythus with the story of Caeneus, and the cylices already published by Hartwig, many with *καλός* names, and others signed, were then discussed, and mistakes in Hartwig's drawings were pointed out. One unpublished cylix proved after cleaning to be made up of ancient fragments with several modern pieces. One of the ancient pieces representing a Maenad is in entirely different style from the crude drawing of the rest of the vase. The whole feeling and technique, the delicate hand, the wrist with the bracelet, the pointed elbow, the beautiful profile of the face, the eye, the earring, the use of red as an accessory, the fine delicate lines in the drapery, and the resemblance to figures on the two signed vases of Olto leave no doubt that this beautiful fragment is in the style of Olto.

Another cylix, which seemed to be complete, but had been entirely painted over, also proved after cleaning to be made up of ancient fragments representing on the interior and exterior scenes from the symposium, clearly in the style of Duris.

A red-figured pyxis representing a door and women running toward it, signed by the hitherto unknown potter Talaus was then discussed, and also a fragment of an oenochoe with the inscription *δ παρὸρ Ἀκρόπρωι*. Two white lecythi, one with the representation of the soul in the form of a pretty little female figure with butterfly wings, are important, also a Cabiric vase with the story of Odysseus and Circe, and a red-figured hydria with a replica of the story of Rhesus (*Il. X*, 469 f.). Other vases of interest are a fifth century, red-figured, bell-shaped crater from Tarentum, representing initiates into the Bacchic mysteries, a Nolan amphora with the story of Midas, fragments of Panathenaic vases, Campanian fish-plates, late Etruscan vases in the form of a duck, a type that goes back to Trojan and Cyprian wares and has a long development extending to modern times, when in Greece today such vases are called *παριαῖς*, and in Mexico are used for sprinkling holy water. Finally the Roman vases were discussed. It is impossible to give an adequate idea of this collection in a short summary, but there is abundant material for a series of articles which are being prepared for publication.

3. Professor Herbert Richard Cross, of the University of Michigan, *The Study of American Art in American Colleges*.

No abstract of this paper was received.

4. Professor Fiske Kimball, of the University of Michigan, *Foundations of our National Architecture*.

No abstract of this paper was received.

5. Professor Alfred M. Brooks, of the University of Indiana, *The Place of Architecture in the Liberal Arts Course*.

No abstract of this paper was received.

6. Professor Wells Bennett, of the University of Michigan, *The Competitions for the Federal Buildings, 1792*.

Major L'Enfant's plan for the Capitol City of Washington contemplated the erection of suitable public buildings. To secure designs for the Capitol and President's house advertisements for plans were published by the commissioners of the federal buildings. Those who entered the competition and whose drawings are recorded, fall into three classes—the carpenter architects, who were builders primarily, the amateurs, gentlemen who took up the practice of architecture as an accomplishment, and the professional architects, trained through academic study. Among some fifteen competitors, Samuel Dobie, who had built the Virginia state capitol, Samuel McIntire, the Salem builder-architect and wood-carver, Doctor William Thornton, a versatile English-bred gentleman, who studied architecture for a few months and submitted the successful design, and Stephan Hallet, a French "architecte expert," a rank second only to the Academicians, are most worthy of notice.

To Thornton and Hallet, together with Thomas Jefferson, whose influence was great in molding public opinion as to the desirable type of building, the design as finally executed owed most. The first American competition of note shows the small beginnings of architectural practice in the newly founded republic. The designs for the most part were inspired by such works as Gibbs' *Designs in Architecture* and the *Vitruvius Britannicus*, Stephen Hallet being the only competitor to have had academic training. His designs, in the finished French academic manner, set up new architectural standards in America. In the subsequent development of our national architecture they may be said to mark the end of the Colonial period.

7. Professor Holmes Smith, of Washington University, *Some Aspects of Art Instruction in Colleges and Universities of the United States*.

No abstract of this paper was received.

FRIDAY, DECEMBER 29. 3 P.M.

1. Miss Georgiana Goddard King, of Bryn Mawr College, *St. Mary of Melón*. Read by Professor Walton.

Of the Cistercian church, S. Maria de Melón, nothing is known except that it was founded in 1142 and commenced in 1147. It has the French plan of

ambulatory and radiating chapels, rib-vaults, a chevet, transepts, and one nave (of which only one bay remains). The proportions of the space and absence of nave-aisles suggest influence of the Friars' Gothic. The ambulatory recalls Moreruela, founded in 1131 and commenced in 1142; the capitals recall Font-froide and Veruela. The nave of Orense apparently affected it. Orense was begun in the middle of the twelfth century, consecrated in 1194, mainly finished by 1248, the porch added in the fifteenth century, and the ambulatory in the sixteenth. Melón must have been built mostly in the thirteenth and fourteenth centuries, with alterations in the seventeenth.

This paper will be published in full in a later number of the JOURNAL.

2. Professor T. Lindsey Blayney, of the Rice Institute, *Great Monuments of the Architecture of India*.

No abstract of this paper was received.

FRIDAY, DECEMBER 29. 8 P.M.

Joint Session with the American Philological Association

1. Professor James H. Breasted, of the University of Chicago, *The Studio of an Egyptian Portrait Sculptor*.

No abstract of this paper was received.

2. Mr. William Templeton Johnson of San Diego, *The Archaic Architecture of New Mexico*.

New Mexico is little known and sparsely populated, but its history is rich and varied. Eighty years before the Pilgrims landed at Plymouth, Coronado had explored the Rio Grande Valley and New Mexico was permanently occupied more than one hundred and fifty years before the founding of the first Mission in California. The early explorers were astonished to find a tenement house type of architecture flourishing along the Rio Grande. The pueblos were great fortresses, like rookeries, sometimes containing one thousand rooms and rising to a height of five stories and usually built about an interior court. The walls were puddled adobe or roughly hewn stone, the rafters pine logs, the small branches being laid across the rafters and covered with adobe to form the roof or the floor of the room above. Adobe has remained to this day the chief building material in New Mexico. Its use is very appropriate in this dry and arid region and the soft rich color of the sun-dried bricks blends harmoniously with the brilliant sky. It was natural that Spanish Colonial architecture in New Mexico was strongly influenced by that of the pueblos, for undoubtedly the Indians were the chief source of labor supply.

The settlers built twenty-five churches between 1600 and 1630. These constituted a distinct type, often cruciform in plan, with bell towers, and dependent monastic buildings. The walls were enormously thick and the windows very small. The most interesting feature of these buildings was the great pine beams of the roof, which were supported on single or double rows of rough-hewn corbels. The beams and corbels were often ornamented with crude carvings made with gouge and chisel, and when these were painted the effect.

was very striking. It is interesting to study the development of these corbels or bolsters. The motive seems to be derived from the acanthus leaf modillion of the Roman cornice. It was freely used in the Italian Renaissance, and in Spain became a grotesque feature grafted on the capitals of columns for greater support of the architrave. In Mexico it was further simplified and in New Mexico passed from stone to wood and became simplified to its lowest terms.

The secular architecture of New Mexico has as definite characteristics as that of the churches, the main features being the use of the recessed portal and placita, thick walls, small windows, and projecting roof beams,—all horizontal lines being very strongly marked. This very picturesque architecture has been sadly neglected and repairs have been entirely out of keeping with the original style. However, a movement was started in Santa Fé a few years ago to awaken interest in the old architecture, and much creditable work has already been done in reviving the style.

ARCHAEOLOGICAL NEWS¹

NOTES ON RECENT EXCAVATIONS AND DISCOVERIES; OTHER NEWS

WILLIAM N. BATES, *Editor*
220, St. Mark's Square, Philadelphia, Pa.

GENERAL AND MISCELLANEOUS

CONSTANTINOPLE.—Miscellaneous Discoveries.—The objects of archaeological interest which were uncovered in 1913, when the old royal estate at Seraglio Point was turned into a public park, are described and illustrated by E. UNGER (*Arch. Anz.* 1916, cols. 1-48; plan; 34 figs). They consist of the substructures of extensive Byzantine and Turkish buildings, with inscriptions on stone, stamped bricks, fragments of architectural sculpture, reliefs, Byzantine pottery, etc.

CYPRUS.—Discoveries in 1914.—In *R. Arch.*, fifth series, IV, 1916, pp. 157-162, the report of Mr. MARKIDES, curator of antiquities in Cyprus, for the year 1914 is given in a French translation from the original English. At various places tombs were found, the dates of which range from the Bronze Age to Ptolemaic times or later. In none of them were objects of much importance discovered. Some foundation walls were found near Larnaca, and fragmentary pottery in various places. Measures have been taken for the preservation of antiquities, and the museum is constantly growing in importance.

FARAGAB.—A Prehistoric Site.—In *Ann. Arch. Anth.* VII, 1916, pp. 107-114 (5 pls.), C. G. SELIGMAN describes his excavations about a mile north of Faragab in northern Kordofan, where there are four prehistoric mounds. They are from nine to twelve feet high. Trenches run in various places yielded objects of stone, bone, and ivory, beads, disks of ostrich-egg shell, and pottery, including great quantities of fragments. There were also found fresh water shells and rocks brought from a distance. The writer believes that the site may date as far back as Ptolemaic times, when, he thinks, Faragab was occupied by a people rich in cattle, living in grass huts, using bone points for their weapons, and working ivory with stone implements.

¹The departments of Archaeological News and Discussions and of Bibliography of Archaeological Books are conducted by Professor BATES, Editor-in-charge, assisted by Professor C. N. BROWN, Miss MARY H. BUCKINGHAM, Dr. T. A. BUENGER, Mr. L. D. CASKEY, Professor HAROLD R. HASTINGS, Professor ELMER T. MERRILL, Professor LEWIS B. PATON, Professor A. S. PEASE, Professor S. B. PLATNER, Professor JOHN C. ROLFE, Dr. JOHN SHAPLEY, Professor A. L. WHEELER and the Editors, especially Professor MARQUAND.

No attempt is made to include in this number of the JOURNAL material published after January 1, 1917.

For an explanation of the abbreviations, see pp. 115-116.

NECROLOGY.—Guido Baccelli.—Guido Baccelli died January 11, 1916, seventy-six years old. He was minister of public instruction four times from 1879 to 1900, and very influential in bringing about extended and systematic excavations in Rome. (*B. Com. Rom.* XLIII, 1915 (published 1916), p. 342 ff.)

Commandant Cros.—The death in battle of Commandant Cros, who continued the excavations of De Sarzec in Babylonia, was announced to the Académie des Inscriptions July 2, 1915. (*R. Arch.*, fifth series, III, 1916, p. 307.)

Guy Dickins.—In August 1916 Captain Guy Dickins was instantly killed in battle near Pozières, France, while stooping to assist two of his men who had been wounded. He was a graduate of the University of Oxford, and was for a time connected with the British School in Athens. He took part in the excavation of the temple of Artemis Orthia at Sparta. He specialized in the field of sculpture, and is known particularly for his *Catalogue of the Acropolis Museum*, Cambridge University Press, 1912.

Georgio Schneider Grazioso.—Georgio Schneider Grazioso was killed in battle near Veliki Kribach, September 17, 1916. He was particularly interested in Christian archaeology, but also a frequent contributor to the *B. Com. Rom.* (*B. Com. Rom.* XLIII, 1915 (published 1916), p. 298.)

Augustin François Imbert.—Augustin François Imbert was born at Strassburg in 1851 and died at Brezolles March 5, 1916. Since 1887 he had been greatly interested in Lycian inscriptions and had made important contributions to their decipherment and interpretation. (*S. R.*, *R. Arch.*, fifth series, III, 1916, p. 425.)

Georg Loeschke.—Georg Loeschke, Professor of Classical Archaeology at the University of Berlin, died November 26, 1915. He was born in 1852 and took his doctor's degree at Bonn in 1876. In 1879 he was called to Dorpat where he remained ten years, going from there to Bonn. He was called from Bonn to the University of Berlin in 1912. Among his works are, *Mykenische Tongefässe*, 1879; *Mykenische Vasen* (with Furtwängler), 1886; and many archaeological papers. (*F. KOEFF*, *Jb. Kl. Alt.* XXXVII, 1916, pp. 139-147.)

Paul Thiers.—The curator of the Archaeological Museum at Narbonne, Paul Thiers, died at Narbonne June 24, 1916. He was an excellent epigraphist, the originator of the lapidary collection at Narbonne and of fruitful investigations at Castel-Roussillon. (*S. R.*, *R. Arch.*, fifth series, IV, 1916, p. 176.)

Ivan Ivanovitch Tolstoi.—Count Ivan Tolstoi, formerly director of the School of Fine Arts at St. Petersburg, minister of public instruction, deputy in the Douma, and mayor of St. Petersburg, died June 4, 1916. With his teacher Kondakoff he published a great illustrated work, *Rousskia Drevnosti*, on the antiquities of Southern Russia. (*S. R.*, *R. Arch.*, fifth series, III, 1916, pp. 427 f.)

William Hayes Ward.—Rev. Dr. William Hayes Ward died August 28, 1916, as the result of being thrown from a carriage nearly a year before. He was born in Abington, Mass., June 25, 1835, graduated from Amherst College in 1856, and from the Andover Theological Seminary in 1859. For forty-nine years he was editor of the *New York Independent*. He took a prominent part in the work of the American Bible Society and other similar societies, and was a prolific writer on oriental subjects. His most important work is

Seal Cylinders of Western Asia, published by the Carnegie Institution in 1910. (Boston Herald, August 29, 1916.)

THRACE.—*Excavations at Éléonte in 1915.*—In *C. R. Acad. Insc.* 1916, pp. 40–47 (plan; 2 figs.), E. POTTIER gives an account of the excavations under fire of Mm. Chamonard and Courby of the French army at Éléonte in Thrace, from July to September 1915. The ancient cemetery was found, and in it many stone sarcophagi and clay jars. The sarcophagi contained vases, chiefly scyphi, terra-cotta figurines of Tanagra style representing men and women, others of Demeter and Aphrodite, jewelry, lamps of Greek style, toilet articles and implements of different kinds. The tombs date from the sixth to the second century B.C. Other excavations were carried on from October to December by Lieutenant Leune a short distance to the south, where a few terra-cottas, several Corinthian alabastra, a bull's head vase, and vases of other styles came to light. These excavations were carried on by means of trenches.

BABYLONIA AND ASSYRIA

NIPPUR.—*The Myth of the Descent of Ishtar.*—It has recently been discovered that two fragments of a tablet from Nippur in the Museum of the University of Pennsylvania contain part of a Sumerian version of the story of the descent of Innini or Ishtar to the lower world. The writing on the obverse of the tablet is completely destroyed; but on the reverse there are twenty-three well-preserved lines in which Innini bids the watchman open the seven gates which lead to the presence of the queen of Arallu. The later Semitic poem on the same subject was based on this Sumerian original. (S. L. (ANGDON), *Museum Journal*, VII, 1916, pp. 178–181; fig.)

SYRIA

DEVE HUYUK.—*A Cemetery of the Persian Period.*—In *Ann. Arch. Anth.* VII, 1916, pp. 115–129 (9 pls.; fig.), C. L. WOOLLEY describes a cemetery of the Persian period, at present being plundered by peasants, at Deve Huyuk in the Sajur valley in northern Syria. There is a Hittite cemetery on the same site (see *ibid.* VI, pp. 95 ff.). A typical grave was 3 m. long and 0.80 m. wide, the sides formed of rough slabs about 0.80 m. high and the roof of basalt slabs about one metre square. The contents of twenty-five graves are given. The most common objects are bronze bowls chiefly such as are found in Egypt dating from the twenty-sixth dynasty, but showing Phoenician workmanship; but there were also found iron spear heads, iron swords, bronze arrow-heads, flat iron arrow-heads, small curved knives, fine bronze horse-bits similar to Scythian bits from Southern Russia, fibulae of different sizes but of homogeneous type, mirrors, bracelets, anklets, earrings, kohlpots and kohlsticks, amulets, and glazed pottery resembling Hittite. Six specimens of Attic black-figured ware were noted. The beads found were chiefly of glass; and moulded paste scarabs and scaraboids were common. The cemetery dates between 600 and 300 B.C. and is typical for other parts of northern Syria at this time.

GREECE

ATHENS.—*An Archaic Marble Head.*—At the May (1916) meeting of the Berlin Archaeological Society H. Dragendorff showed views of a very archaic

marble head that was found in the foundations of the north tower of the Dipylon gate as constructed in the time of Themistocles. It is made of Naxian marble but by an Athenian sculptor, and from its small size, somewhat less than life, it seems to have belonged to a grave statue of the type of the so-called Apollos. The fortifications of Themistocles contain in their foundations many fragments of the monuments of an earlier generation. (*Arch. Anz.* 1916, col. 88.)

A New Archaeological Periodical.—At the April (1916) meeting of the Berlin Archaeological Society, the President, H. Dragendorff, read a letter from G. Karo in Athens, dated March 15, telling of the active conduct of excavations at the Dipylon and Ceramicus. He also presented the first issue, comprising three numbers, of a new archaeological quarterly, in quarto form, which is published by the Greek Ministry of Religion and Public Instruction, in accordance with a royal decree of July 31, 1914. In this it is intended to gather all the various reports and discussions of the Ephors of Antiquities and other officials, on their excavations or constructive works, descriptions of newly acquired objects in the Greek museums, and also reports of the work of the foreign archaeological institutes in Athens. The yearly subscription is 15 drachmas. (*Arch. Anz.* 1916, cols. 87–88.)

PAROS.—Prehistoric Remains.—At the February (1916) meeting of the Berlin Archaeological Society O. Rubensohn spoke, with lantern illustrations, of the prehistoric finds on the citadel of Paros. There are the remains of some unpretentious houses, built directly on the rock and consisting of four small rooms around a court. They were in use for a considerable time and show numerous alterations and repairs. The potsherds found in them do not include the older Cycladic ware, being all wheel-made, but are very rich in both native and imported pottery, especially that imported from Melos, down to a period not later than the year 1700 B.C. This date is indicated by the entire absence of the naturalistic style, influenced by Kamares ware, which appeared in Melos and in Egypt at the time of the twelfth dynasty, 1900–1800 B.C., and might have been a century in developing. The site on Paros seems to have remained uninhabited for 300 or 400 years, as the next styles found are late Mycenaean and late Geometric. No native ware except rough pots for domestic use is found after the early epoch. (*Arch. Anz.* 1916, cols. 82–86.)

ITALY

ARCHAEOLOGICAL DISCOVERIES 1909–1914.—In *Cronaca delle Belle Arti*, III, 1916, pp. 53–60, E. GALLI continues his summary of the archaeological discoveries in Italy from 1909 to 1914. Most of these have already been reported. The more important objects brought to light in Etruria have been placed in the museum at Florence, while the less important have for the most part been deposited in various local museums. At **Marsiliana** several important tombs were opened in 1912; and the next year the prehistoric cave of **Golino** and the large cemetery south of **Teimonaccio** were explored. At **Staltonara** tombs were opened in a large Etruscan cemetery and many inscribed sarcophagi of nenfro with recumbent figures on the lids, vases, etc., found. The tombs date from the third to the first century B.C. The bust of a woman of nenfro was taken to Florence, and the other objects to the museum at

Viterbo. There was also taken to Florence from the vicinity of Chiusi a square pillar and part of a second, adorned with the figure of a seated Persephone. They are carved on all four sides and show traces of color. They date from the fifth century B.C.

AOSTA.—Preservation of the Roman Remains.—By a decree of April 30, 1916, the land about the ancient monuments in Aosta was expropriated so that the Roman wall, the bridge, the theatre, and the Porta Praetoria can now be cleared of the buildings which encroach upon them, and other steps taken for their preservation. (*Cronaca delle Belle Arti*, III, 1916, p. 60.)

CALABRIA.—Recent Discoveries.—In *Cronaca delle Belle Arti*, III, 1916, pp. 75-78, P. ORSI gives a summary of the excavations carried on at Locri and at Croton from 1909 to 1911. These have already been reported. In 1912 the site of Caulonia with the remains of a large Doric temple was found. Further excavations were conducted on the site in 1913 and 1915, and in 1916 some fine architectural terra-cottas were discovered dating from the fifth century B.C. They had belonged to a small temple which was entirely destroyed. In 1916 also parts of the old Greek walls of Reggio di Calabria were uncovered, and further excavations carried on in the cemetery of Lucifero at Locri. At Cotrone many marbles, including some with long inscriptions, were found in the sea at Punta Scifo. A search for the site of Terina was fruitless, although a few small objects, among them an inscribed bronze plate, were brought to light. The small settlement on the hill of Tirrena near Nocera is to be identified as the ancient Nuceria. At Monte Leone, on the site of the Greek Hipponium, the ancient town walls were largely used in building the modern town; but in 1916 some of them were uncovered at Trappetto, as were also the foundations of an archaic temple.

ETRURIA.—Archaeological Discoveries 1909-1914.—In *Cronaca delle Belle Arti*, III, 1916, pp. 73-75, E. GALLI continues his account of the archaeological discoveries made in Etruria from 1909 to 1914 (see *A.J.A.* XX, 1916, p. 363). Most of them are of minor importance and already reported in *Not. Scav.* and elsewhere.

ROME.—Recent Discoveries.—In *B. Com. Rom.* XLIII, 1915, pp. 218-234, LUIGI CANTARELLI reports the following discoveries in Rome: In the Piazza Colonna on the site of the Palazzo Piombino new remains of buildings came to light. The Via Flaminia, a road running parallel to it at a distance of 45 m. and two other streets perpendicular to them, bound a rectangular brick building. Brick stamps date this at 123-125 A.D. To the north was discovered the south wall of another large brick building; to the east a structure of about 400 A.D. Between the two last mentioned was found a large room, vaulted, divided by two walls, one with three entrances formed by two granite Ionic columns, the other with one formed by two marble Corinthian pilasters. Over them were brick arches. Adjacent is a corridor with niches into which water ran. Pipes were found bearing the inscription: FLFL-GARTEMIORUMGDRGVII. Among the various fragments of sculpture and architecture discovered may be mentioned a marble cippus inscribed: M PONTIO MF PALATINA | ECLECTO ARCHELAO · CV | CONS CURATORI CARTHAGINIS VNICAE BONITATIS | ET GRVITATIS VIRO PATRO·NO · INCOMPARABILI | VALERII PHILOSTORCVS | SENIOR ET IVNIOR CLIENTES EDII | SEMPEREIVS AVXILIS :

Ibid. pp. 328-341 the same writer records the discovery in the Via Po of tombs of *opus reticulatum* and brick.

TUSCULUM.—Miscellaneous Discoveries.—In *B. Com. Rom.* XLIII, 1915, pp. 207-217 (2 pls.), F. Grossi Gondi calls attention to the following discoveries at Tusculum: 1. A republican inscription from the acropolis; 2. an inscription found near the house of the Caecilii; 3. Remains of buildings belonging to the Villa Furiorum, and an early tomb; 4. an inscription which fixes the location of the villa of C. Iavolenus Capito between the ninth and tenth milestones on the Via Latina, and also of the mediaeval *Oratorium Faustinae*

in fundo Capitonis at the cemetery near the tenth milestone; 5. traces of a road under Monte Porzio, probably connecting the roads from Frascati to Statio ad Quintanos and to Labicum.



FIGURE 1.—STATUETTE OF APHRODITE IN THE LOUVRE

FRANCE

ALESIA.—Recently discovered Bronzes.—

In *Mon. Piot*, XXI, 1913, pp. 73-87 (3 pls.; fig.), J. TOUTAIN publishes two bronzes found at Alesia in 1912, one a Gallo-Roman portrait bust of a woman, and the other a head of Juno. The latter, which is almost perfectly preserved, is 11 cm. high and was probably once attached to a piece of furniture. It is a Greek work derived from a type dating from the fourth century B.C. The bust, found at the same time and place, is intact except for one of the eyes and the pupil of the other. Its total height is 23 cm. It dates from the time of Claudius or Nero and is one of the best Roman portraits extant.

NEVERS.—A Group of Two Divinities.—In *B. Soc. Ant. Fr.* 1915, pp. 259-260, A. HÉRON DE VILLEFOSSE reports the discovery at Nevers of a group of two Gallo-Roman divinities. One is a god with thick hair and beard, holding a small round vase in his raised right hand and a plate of fruit, or cakes, in his left. The second figure is a youthful goddess, but the attributes which she holds are hard to make out.

PARIS.—New Statuettes of Aphrodite in the Louvre.—The Louvre has recently received from Egypt two marble statuettes of Aphrodite. One is an Aphrodite Anadyomene found at Horbeit. It is broken off at the waist, and the left arm, which is raised, is gone from the wrist. With her right hand the goddess is gathering up part of her hair. The workmanship is good. The second is a large statuette from Sakha, the ancient Xoïs (Fig. 1), and measures in its present state 0.58 m. in height. The head, left arm from above the wrist, right arm from below the shoulder to the hand, which is attached to the thigh, right leg from below the knee, and left foot are missing. The drapery completely concealed the figure from behind, one edge being caught over the left arm and the other grasped by the right hand. The figure appears to be unique, although the general type is that of the Venus Felix of the Vatican. (É. MICHON, *Mon. Piot*, XXI, 1913, pp. 163-171; 2 pls.)

A Relief Representing Mercury.—In *B. Soc. Ant. Fr.* 1915, pp. 278-280, A. HÉRON DE VILLEFOSSE reports that in 1914 a relief representing Mercury was found in an old well in Paris. It is 0.50 m. high. The god is nude with remains of drapery on his left shoulder, and he held a purse in his right hand and probably the caduceus in his left. Four other similar reliefs have been found in Paris.

BELGIUM

COURTRAI.—A Bronze Statuette.—In *Mon. Piot*, XXI, 1913, pp. 145-162 (2 pls.; 2 figs.), J. DE MOT publishes a bronze statuette found at Courtrai (Roman Cortoriacum) in 1913 by workmen digging the foundations for a house. It is 24 cm. high and represents a young girl entirely nude with her hands behind her head arranging her hair (Fig. 2). The right foot is missing, and the left elbow and right thigh are injured, but otherwise the figure is well preserved. Several large statues, noticeably the Venus from the Baths of Caracalla, one in the Torlonia Museum, and a third in the Palazzo Torlonia bear a close resemblance to it. The writer argues that it was not intended for an Aphrodite, as might be supposed, but was an ex-voto representing a mortal woman. In style it shows Polyclitan affinities. It was undoubtedly imported into Belgium in antiquity.

GERMANY

BERLIN.—Palaeolithic Sculptures from Southern France.—In *Ber. Kunsts.* XXXVI, 1915, cols. 99-109 (6 figs.), C. SCHUCHHARDT publishes four palaeolithic reliefs from the vicinity of Les Eyzies, near Périgueux (Dordogne), recently acquired by the Berlin museum. They represent: 1. a wild goat, from Laugerie Basse; 2. the back part of a horse, from Laugerie Intermédiaire; 3. the head of an animal (horse or reindeer), from the same stratum at Combe Capelle from which came the skeleton of the *Homo Aurignacensis*;

4. a nude woman, from Laussel. Four human figures were found, three of women and one of a man, 25 to 30 cm. high. The female figures are nude and very heavy, while the male figure is thin and wears a girdle. Illustrations of the two female figures now in private possession at Bordeaux are also given.

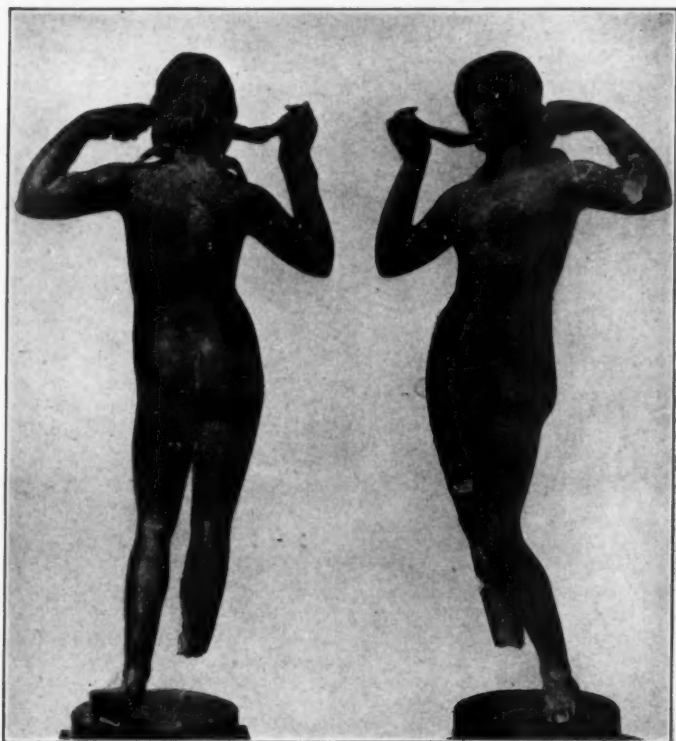


FIGURE 2.—BRONZE STATUETTE FROM COURTRAI

A Statuette of Lugal-Kisal-si.—In *Ber. Kunsts.* XXXVI, 1915, cols. 73-80 (4 figs.) O. WEBER publishes a statuette of Lugal-Kisal-si, king of Erech, recently acquired by the Berlin museum. It is of yellow limestone, 23.8 cm. high, and represents only the upper part of the king's body. The part below the waist is not modelled. The figure (Fig. 3) has a round head with large, bulging eyes, and large ears set too far back. The nose is broken. A long beard arranged in six braids, or rows, falls down the breast, while the hair of the head is similarly arranged in eight rows which are carried over the top of the head and as far down the back as the beard extends in front. The hands

are clasped over the chest. Below the waist is a Sumerian inscription. Early Sumerian figures in the round are extremely rare. This one dates from about 2900 B.C. and is said to have been found at Erech.

A Basalt Fragment of King Entemena of Lagash.—In *Ber. Kunsts.* XXXVI, 1915, cols. 114–120 (3 figs.), O. WEBER publishes part of a large basalt vessel dedicated by Entemena, king of Lagash to some unknown divinity. Upon it is represented the goddess Nidaba or Nisaba seated, with her face turned towards the spectator. She wears a crown with two horns. Her hair falls in masses over her shoulders above each of which are three flower stems. In her right hand she holds a bunch of something, perhaps maize. The fragment is 25 cm. high, 19 cm. wide, and 4 cm. thick, and dates from about 3000 B.C. Above the head is a fragmentary inscription.

An Archaic Greek Statue.—In *R. Arch.*, fifth series, IV, 1916, pp. 180–182 (fig.), S. R(EINACH) publishes a cut of a fine statue of a seated goddess (Fig. 4) which was in Paris in the early part of 1914. As the property of an Austrian (?) it was sequestered after the war began, but in 1915 the antiquary Virzi, of Palermo, proved his ownership, and the statue was released. It is now in the museum at Berlin. It is said to have been found in Sicily or Southern Italy. It is a remarkably fine example of Greek (perhaps Athenian) sculpture of a time about 480 B.C. It exhibits no trace of polychromy.

Reports of Discoveries.—At the March (1916) meeting of the Berlin Archaeological Society, Herr Dessau spoke on the new fragment of the *Acta Fratrum Arvalium*, of the year 240 A.D., which was found in 1914 in the pavement of the church of S. Crisogono in Trastevere. It gives some corrections of the readings of the already known *Acta* of the year 218, e.g., *mensa sacrum fecerunt ollis* (with oaks) instead of the puzzling *ollis* (with pots). Unfortunately the text of the old chant of the priests is not given (see *Not. Scav.* 1914). A report from G. Karo in Athens, illustrated by photographs, was read, on the treasure which was found at Tiryns in December, 1915 (see *A.J.A.* XX, 1916, p. 363). It contained among other things a genuine Hittite seal-cylinder, which is of some importance. (*Arch. Anz.* 1916, cols. 86–87.)

An Altar of Hercules Saxetanus.—At the May (1916) meeting of the Berlin Archaeological Society, H. Dragendorff showed pictures of an altar dedicated to Hercules Saxetanus in the first century B.C., by soldiers of the XIV Legion, which was stationed at Mainz. The altar was found in digging military trenches on the western battle front. (*Arch. Anz.* 1916, col. 88.)



FIGURE 3.—STATUETTE OF LUGAL-KISAL-SI, BERLIN

A New Archaeological Periodical.—The *Römisch-Germanisches Korrespondenzblatt* which has been published bi-monthly by Dr. Krüger at Trier, will give place, after completing the volume for 1916, to a similar *Korrespondenzblatt* of the Imperial Roman-Germanic Commission of the Imperial German Archaeological Institute. The new publication, also bi-monthly, will be doubled in size and will cover a wider field, including all matter germane to the purposes of the Commission, such as discussions, notices of acquisitions by museums, the doings of local societies, and other literary articles, as well as reports on the progress of excavations and discoveries. The Commission has

taken steps to have recorded and preserved, all objects of archaeological interest which are discovered in the course of military operations on the western front. (*Arch. Anz.* 1916, col. 97.)



FIGURE 4.—GREEK STATUE IN BERLIN

A New Section of the Work on the Roman Limes.—At the January (1916) meeting of the Berlin Archaeological Society, F. Trendelenburg presented, as the subject of the *Winkelmannsprogramm* for the year, Part 40 of the work, *Der Obergermanisch-Rätische Limes des Römerreichs*. It treats of Section I, the limes from the Rhine to the Lahn, and is a substantial volume (154 pages of text, 23 plates, 5 maps) prepared by E. Fabricius with the assistance of others, including the late Georg Loeschke. The general purpose of this frontier defence is discussed, its course and the remains, the positions and communications of the watch stations, the piling fence, the palisade, the wooden and stone towers and

other buildings, and finally the dating of all these constructions. (*Arch. Anz.* 1916, cols. 81-82.)

MUNICH.—**Acquisitions of the Museums in 1914.**—A list of thirty-three objects in bronze, terra-cotta, plaster, and pottery, which were added to the possessions of the Antiquarium and the Vase Collection at Munich in 1914 is published by J. SIEVEKING in *Arch. Anz.* 1916 (cols. 56-71; 23 figs.). There are three good small bronze statuettes, a stag of Roman work, and a seated man and a siren of archaic Greek work; also in bronze a Graeco-Roman oil-flask with perforated bottom and a Roman steelyard with two scales running up to 30 pounds. In terra-cotta, a primitive Boeotian painted chair-idol with bird head; a mourning woman with disproportionately large arms raised above the head, from Boeotia; a graceful seated maiden (Greece); a large comedy mask (*θεράπων ἡγεμών*) from Samsun (Asia Minor); several caricatures and ithy-

phallic figures and lamps. A small limestone grave relief of a woman with a bird in an aedicula, from Albania. Three fragments of plaster models for casting metal vessels in relief, from Egypt. Vases: a Boeotian bowl on high foot, painted with birds; two Attic white lecythi and one red-figured with white painting; a miniature Panathenaic amphora from Cumae; a large *askos* and a colonnette crater from Apulia.

HUNGARY

BUDA-PESTH.—*Acquisitions of the Art Museum.*—The Museum für bildende Kunst in Buda-Pesth announces the issue of a *Jahrbuch*, beginning with 1916, in which the text will be in parallel columns of Hungarian and German. The additions to the collections of the Museum in 1915 include a life-size marble torso from a grave-monument in Velanidezza, dated 340–330 B.C., which is of some importance for the treatment of costume in Greek art; two marble portrait busts (Hermarchus and Pittacus?) which are intact and are good typical examples of the work of Asia Minor copyists in the time of Trajan and Hadrian; also terra-cottas from a private collection in Munich, comprising 650 pieces in an almost unbroken series from Mycenaean to Roman times and especially rich in specimens from Tarentum and Smyrna. (*Arch. Anz.* 1916, cols. 71–72.)

GREAT BRITAIN

LONDON.—*Recent Discoveries of Roman Remains.*—In *Archaeologia*, LXVI, 1915, pp. 224–274 (4 pls.; 29 figs.), F. LAMBERT gives an account of recent discoveries of Roman remains in London. Under Leadenhall Market are remains of a large building which has not been identified. On the site of the General Post-Office many Roman remains were discovered in 1913. These included 89 fragments of decorated Samian ware, 52 of which came from the potteries of La Graufesenque and 37 from those centred in Lezoux. The finds in the southern part of the site date from the first century A.D. and those in the northern half from the second. Among the objects brought to light was a gold ring with plain oval bezel and intaglio of an eagle devouring a hare. The pottery fragments are described in detail and a list of the stamps given. Notes on the remains of animals examined by E. T. Newton are added. These are ox, sheep, pig, horse, goat, dog, cat, roebuck, red deer and fowl. At Nos. 3 to 6 King William Street several complete Samian ware bowls and many fragments were found. By noting the places where coins and Samian ware sherds have been unearthed the author tries to locate the earliest settlement of Londinium and its enlargement in later times.

RICKMANSWORTH.—*Excavations in 1914.*—In *Archaeologia*, LXVI, 1915, pp. 195–217 (12 figs.), R. A. SMITH reports upon the excavations carried on by the British Museum in 1914 at Rickmansworth. At a place known as Mill End gravel to a depth of seventeen feet was carefully examined, but no implements found; while at Long Valley Wood about forty flakes were discovered. *Ibid.* pp. 217–224 H. DEWEY makes a geological report of the sites and discusses the gravels of the Thames valley.

NORTHERN AFRICA

CASABLANCA.—*Latin Inscriptions.*—In *B. Soc. Ant. Fr.* 1915, pp. 292-295, A. HÉRON DE VILLEFOSSE publishes eight Latin inscriptions brought from Tangiers to Casablanca, Morocco, by Lieutenant Meknès. One of them dated in the year 345 A.D. has the phrase *ancilla Christi*. This is the third Christian inscription found in Morocco.

THUBURBO MAJUS.—*An Inscription Relating to Aesculapius.*—In *C. R. Acad. Insc.* 1916, pp. 262-267, A. MERLIN publishes a Latin inscription recently discovered at Thuburbo

Majus. It seems to have been set up at the entrance to a temple of Aesculapius and reads: *Jussu domini Aesculapi L. Numisius L. f. Vitalis podium de suo fecit. Quisq. intra podium adscendere volet a muliere, a suilla, a faba, a tonsore, a balneo commune custodiat triduo. Cancellus calciatus intrare nolit.*

VOLUBILIS.—*The Inscription of the Arch of Caracalla.*—In *B. Soc. Ant. Fr.* 1915, pp. 260-269, R. CAGNAT reports upon the excavations carried on under the direction of General Lyautey at Volubilis (Ksar-Faraoun), Morocco. More than forty fragments of the great inscription of the triumphal arch of Caracalla



FIGURE 5.—HEAD OF GODDESS, BOSTON

were found permitting its complete restoration, since the same inscription was cut on each side of the monument. The arch was erected between December 10, 216 and April 8, 217 A.D. The actual digging was done by German prisoners of war.

UNITED STATES

BOSTON.—*The Head of a Goddess.*—In *B. Mus. F. A.* XIV, 1916, pp. 28-29 (2 figs.), L. D. C(ASKEY) publishes the head of a goddess, perhaps Persephone, recently acquired by the Museum of Fine Arts (Figs. 5 and 6). It is greater than life size, and a Roman copy in marble of an original which seems to have been of bronze. The tip of the nose is gone but in other respects the head is well preserved. It was worked for insertion into a draped statue, the

best preserved replica of which is in the Conservatori Palace. The original must have been made about the middle of the fifth century B.C. and it may have been an early work of Phidias. It cannot, however, be attributed to any master with certainty.

A Portrait Head of Marciana.—In *B. Mus. F. A.* XIV, 1916, pp. 36-38 (3 figs.), L. D. C(ASKEY) publishes a marble portrait head of Marciana, the sister of Trajan, recently acquired by the Museum of Fine Arts. It is life size, and except for the nose is well preserved. It is evidently an admirable portrait with no idealization. The identity is made certain by coins.

CLEVELAND.—**Oriental and Archaeological Books.**—The Cleveland Public Library has acquired the John G. White collection of 30,000 volumes and pamphlets on folklore, oriental and mediaeval literature and archaeology, especially the archaeology of Asia. The collection is particularly strong in Egyptology, Assyriology and American archaeology, and includes the publications of the Archaeological

Survey of India. Books will be lent to scholars who apply for them through the libraries of the institutions with which they are connected. Applications should be made to the Librarian, Cleveland Public Library, Cleveland, Ohio.

NEW YORK.—**Acquisitions of Vases by the Metropolitan Museum.**—During the year 1916 five Greek vases were acquired by the Metropolitan Museum. They are: 1. a Panathenaic amphora with a scene from the *pancratium* (Brauchtich, No. 22); 2. a black-figured hydria with scenes representing Heracles and Triton, and, on the shoulder, Dionysus in a chariot accompanied by Maenads; 3. an early red-figured column crater having on one side Dionysus and a satyr and on the other a satyr alone; 4. a *lebes gamikos* with a scene representing the *epoulia*; 5. a South Italian crater of the fourth or fifth century B.C. on which blue and white paint was used. One scene on the vase may represent the visit of Thetis to Hephaestus to obtain armor for Achilles; the other scene has not been identified. (G. M. A. R(ICHTER), *B. Metr. Mus.* XI, 1916, pp. 253-257; 7 figs.)



FIGURE 6.—HEAD OF GODDESS, BOSTON

PHILADELPHIA.—Acquisitions of the University Museum.—The Museum of the University of Pennsylvania has recently acquired a fine male torso of Pentelic marble considerably smaller than life size (Fig. 7). It is a Greek original and appears to date from the end of the fourth century. S. B. LUCE, who publishes it (*Museum Journal*, VII, 1916, pp. 87-92; fig.), thinks it has close affiliations with the Praying Boy in Berlin.

EARLY CHRISTIAN, BYZANTINE, MEDIAEVAL, AND RENAISSANCE ART

ITALY

AREZZO.—Documents on S. Maria della Pieve.—In *Arte e Storia*, XXXV, 1916, pp. 102-108, A. DEL VITA publishes a series of fifteenth century documents giving the masters and payments for the decoration of the choir, the bell, and the organ, of S. Maria della Pieve, Arezzo.



FIGURE 7.—MARBLE TORSO IN PHILADELPHIA

CASTELLO DI PAGANICO.—Monuments of Sienese Art.—In *Arte e Storia*, XXXV, 1916, pp. 1-6, G. CAROCCI describes the deserted Castello di Paganico, which was made a sort of military colony of Siena in 1278 and preserves its original town plan and its buildings for the most part. The tribune of the church of S. Michele Arcangelo contains frescoes in the manner of Bartolo di Fredi and the main altarpiece of the church recalls Vecchietta.

FORLÌ.—Madonna del Fuoco.—The early fifteenth century Madonna del Fuoco in the chapel of the canons in Forlì Cathedral has long been attributed to a supposed Lattanzio. It has recently been shown that this attribution rests on a misreading of the Latin chronicler, Giovanni Pansecco, and in *Rass. Bibl. Arte It.* XVIII, 1915, pp. 98-100, C. GRIGIONI suggests as painter the chronicler himself,

who was a prominent artist at Forlì and with whose account of the legend the picture closely agrees.

PITIGLIANO.—A House of the Year 1100.—In *Arte e Storia*, XXXV, 1916, pp. 42-51 (fig.), E. BALDINI publishes an unusually interesting inscription from an old house at Pitigliano. It runs: *n b or M C*. This is read: *nostra beata ora pro nobis 1100*. If this interpretation is correct, and some sym-

bolic designs as wheels of fortune and a hexagon, the sign of abundance, seem to corroborate the reading of the date, a new and precious example for the early history of domestic architecture is gained.

RAVENNA.—A New Example of the Square Nimbus.—In *Felix Ravenna*, XXI, 1916, pp. 914-921 (pl.), O. FABBRI calls attention to the square nimbus of Archbishop Martinus in the ninth century fresco in the chapel Sancta Sanctorum of San Vitale. The square nimbus indicates that the archbishop was alive or very recently deceased at the time it was painted. Perhaps he was buried in the rough sarcophagus exhumed below the fresco.

Note on the Original Apse of Sant' Apollinare Nuovo.—In *Felix Ravenna*, XX, 1915, pp. 867-871, G. TURA points out that the apse of Sant' Apollinare Nuovo cannot have entirely fallen before the time of Agnellus, the author of the *Liber Pontificalis* of Ravenna, in the ninth century, because that historian reports the inscription of Theodoric above the windows in the same passage in which he tells of the damage wrought by earthquake.

Sant' Apollinare Nuovo Bombarded.—February 12, 1916, a bomb was dropped from hostile air craft on Sant' Apollinare Nuovo, the famous Arian church of Theodoric. Doubtless the attack was intended for the nearby S. Maria in Porto, the cloisters of which are the principal military establishment of the town. Fortunately the mistake did very little harm to the precious mosaics, but the façade suffered damage to such an extent that all will require rebuilding. (*Felix Ravenna*, XXI, 1916, pp. 922-923.)

Old Views of Ravennate Buildings.—In *Felix Ravenna*, XX, 1915, pp. 858-861 (3 pls.; fig.), C. RICCI publishes sixteenth century representations of monuments of Ravenna in the Sala del Zodiaco of the ducal palace at Mantua. The Porta Aurea is shown in the usual form, but with the remains of a colonnade above. The Mausoleum of Theodoric has stairs, resting on arches of increasing height leading up to a little portico over the entrance door of the upper story, then S. Maria in Rotunda. Of this Renaissance addition there are still traces on the monument. San Vitale is shown very nearly in its present condition, only the campanile had not then been overthrown and the windows were not walled up so much. Unfortunately, though there is an interior view, no attempt is made to show the decorations.

STRONCONE.—An Unusual St. Francis.—In *Arte e Storia*, XXXV, 1916, pp. 33-42 (fig.), S. M. MAZZARA discusses a detached fresco of the Madonna and Child with St. Francis and Two Angels in the church of S. Francesco at Stroncone. He attributes the painting to a Siennese painter working in Umbria in the first half of the fourteenth century. The picture is of considerable iconographic importance because it presents St. Francis in penitential garments, a cruciform tunic, a coarse girdle, and a broad cowl.

SORA.—Cathedral Burned.—On the anniversary of the great earthquake, January 12, 1916, the cathedral of Sora, in which were important canvases by Zuccari and the Cavalier d'Arpino, was burned. Since the fire cleaned the columns and arches of their baroque stucco decoration, the nave will now be rebuilt in the original Gothic style of Frederick II. Various other antiquities of the place will also be cared for by the Superintendent of Monuments. (*Arte e Storia*, XXXV, 1916, pp. 82-85; 4 figs.)

SYRACUSE.—Excavations in the Catacombs.—In *Not. Scav.* 1915, pp. 203-208 (2 figs.), P. ONSI recounts the results of excavations in the catacombs

of Syracuse and publishes some interesting Christian inscriptions. The catacombs are important because of the syncretism they reveal. They are also particularly rich in lamps.

TROPEA.—A Sculptured Ciborium Front.—In *Arte e Storia*, XXXV, 1916, pp. 13-15 (fig.), F. TORALDO publishes a sculptured ciborium front in the cathedral of Tropea. It can be identified as the gift of Pietro Balbo of Pisa, who was bishop 1461-1469, and the work may be ascribed to Matteo Civitate. It has the usual arrangement of a pair of angels on each side of a door below and a half-length God the Father between cherubim in the lunette above.

VENICE.—Important Document for Venetian Jewelry.—In *Arte e Storia*, XXXV, 1916, pp. 6-13 (fig.), A. BACCHINI publishes a contemporary account and drawing of a gilded silver casket presented as a peace offering by the Venetians to the Sultan in 1587. The maker, who must have been at the head of his art in Venice at the time, was paid the prodigious sum of 1600 ducats for his work alone, all materials being furnished. He was Maestro Battista Rizzoletti, a Paduan goldsmith in Venice "*alla Insegna de Gesù in Rialto*." Further documents may allow important anonymous works to be assigned to this new personality in art history.

FRANCE

MONUMENTS ON THE WESTERN BATTLE LINE.—The December 1915 number of *Z. Bild. K.* (XXVII, pp. 49-96; 77 figs.), written by P. CLEMENS and supplied with historically important illustrations, is devoted to the recent vicissitudes and actual condition of the art monuments along the Franco-Belgian front. In *Gaz. B.-A.* XII, 1916, pp. 127-212 (22 figs.; 2 pls.) A. MICHEL writes on the French, and *ibid.* pp. 213-246 (17 figs.; 2 pls.) J. X. on the Belgian monuments suffering from the war.

PARIS.—A Portrait by Catena.—In *Burl. Mag.* XXIX, 1916, p. 225 (pl.), T. BORENIUS publishes and ascribes to Vincenzo Catena a portrait of an unknown Venetian man of letters. The picture, which is not of high quality, was until recently in the collection of Dr. A. Brasseur, Paris.

GREAT BRITAIN

PAINTINGS BY ZOPPO AND CIMA.—In *Burl. Mag.* XXIX, 1916, pp. 161-164 (2 figs.), T. BORENIUS in reviewing volume VII of Venturi, besides suggesting numerous alternate attributions, takes the opportunity of publishing two pictures hitherto overlooked. The first is a Salvator Mundi owned by Mr. F. E. Sidney, London; it is interesting as showing the quaint linear quality and the color sense of the artist, Marco Zoppo. The second is a Madonna with St. Andrew and St. Peter by Cima da Conegliano lately presented to the National Gallery of Scotland, Edinburgh. It represents the Virgin and Child enthroned between two saints in the foreground of a landscape characterized as Cimesque by the castle on a hill in the background. This painting in tempera on panel is unfinished and hence of extreme value for the study of the technical processes of the period.

BURLEY-ON-THE-HILL.—Portraits of Finch and Baines.—In *Burl. Mag.* XXIX, 1916, pp. 292-297 (4 figs.), L. CURT and A. MALLOCH publish a companion pair of portraits by Carlo Dolci of the two famous medical friends dear

to Cambridge University, Sir John Finch and Sir Thomas Baines. These two portraits, together with some other traceable commissions for Finch, are mentioned in Baldinucci's life of Carlo Dolci. The two have always remained in the Finch family possessions. Another portrait likewise preserved at the family seat at Burley-on-the-Hill is by Samuel Van Hoogstraaten and a pendant to a picture in the Royal Picture Gallery at The Hague, which probably represents Anne Finch, Viscountess Conway.

CANTERBURY.—Recent Discoveries in the Abbey Church of St. Austin.—In *Archaeologia*, LXVI, 1915, pp. 377–400 (plan; 10 figs.), W. ST. JOHN HOPE describes the discoveries made in recent years at Canterbury Cathedral. There was excavated a circular area 25 feet in diameter enclosed by a ring of eight huge segmental blocks to carry piers, each eight and one-half feet thick. They open into an encircling ambulatory six feet wide, round within and octagonal without. The total width of the building is 64½ feet. The masonry is constructed of rough pieces of sandstone carefully laid and faced with a thin layer of mortar. This was evidently the structure begun by Wulfic and left unfinished at his death in 1059. It was never completed. On the west this building partly overlays an earlier building, which was probably the church begun by King Ethelbert in 598. The writer describes also the present condition of the tombs of three of the earliest archbishops of Canterbury, Laurence (d. 619), Mellitus (d. 624), and Justus (d. 630).

LONDON.—The Layard Adoration of the Magi by Bramantino.—In *Burl. Mag.* XXIX, 1916, p. 141 (pl.), T. BORENIUS writes a note on the famous Bramantino which by the Layard bequest has come into the possession of the National Gallery. The painting may be dated shortly before 1500 and hence is in an early, though not the earliest, phase of the painter's work.

A New Portrait of Mary Stuart.—The National Portrait Gallery has recently acquired an authentic portrait of Mary Stuart in the style of the Clouet school. It represents a type given also by a miniature in the Uffizi and one in the Ryks Museum. Though possibly a work of Jean de Court, who is thought to have come over to Scotland in the ill-fated queen's train in 1561, the date would seem to be, since the Uffizi miniature of Medici provenance carries the greatest authority, prior to the departure from France. (*Burl. Mag.* XXIX, 1916, pp. 148–153; 2 figs.)

Heraldry at the Burlington Fine Arts Club.—The summer exhibition of heraldry at the Burlington Fine Arts Club is described by G. B. RUSSELL in *Burl. Mag.* XXIX, 1916, pp. 164–168. The exhibition contained rolls and books of arms from the thirteenth century down, and likewise heraldry applied in sculpture, seals, bookbindings, needlework, metalwork, pottery, and glass.

A Drawing by Breu Presented to the British Museum.—In *Burl. Mag.* XXIX, 1916, pp. 183–189 (3 figs.), C. DODGSON publishes a drawing, *The Calumny of Apelles*, by Jörg Breu, recently given to the British Museum by Sir Edward Poynter. The composition is a familiar one. It is indirectly derived from the Mantegnesque pencil drawing in the British Museum. This drawing is based on Lucian's description, as are all the Renaissance reconstructions of the picture, but, curiously for a drawing, the direction of the figures is reversed. It was subsequently copied by Rembrandt, whose drawing is in the British Museum also. But the Mantegnesque composition was originally popularized in the form of a large engraving by the Venetian Giro-

lamo Mocetto, who added as a background the Campo di SS. Giovanni e Paolo, Venice, reversed. Now Breu has copied this engraving with considerable modification of the architecture, including *e.g.* the introduction of a foreground loggia in which the action takes place. From indications in his woodcuts it is generally believed that Breu visited Venice in 1514-15 and the German character of this drawing with its close similarity to other of Breu's works of approximately that date, especially in shading and treatment of drapery, makes quite certain its addition to the rare drawings of this artist of the Renaissance



FIGURE 8.—PORTRAIT OF RAPHAEL (?), WINDSOR CASTLE

at Augsburg though it is at present impossible to make the needed comparison of the written names of the figures, written presumably in Breu's autograph, with the only known specimen of the artist's handwriting, a document in the Augsburg archives.

An Attribution to Raphael.—In the thirty-sixth instalment of his notes on pictures in the royal collections, L. CUST brings forward as a possible portrait of Raphael by himself (Fig. 8) a picture in Windsor Castle. It is recorded that "a man with a black cap by Raphael" existed in the appraised collection of Charles I. In the collection of James II the picture reappears as "Raphael's picture in a black habit and black cap done by himself." It now seems that the painting in Hampton Court usually associated with these entries first entered into the royal collections in the time of George III. Therefore the Stuart picture yet remains to be rediscovered. The identification here proposed is outwardly plausible enough, but the real evidence that the Windsor Castle portrait is either of or by Raphael remains admittedly inconclusive. Its authenticity would stand or fall according to the judgment passed on some dozen Raphael-

at Augsburg though it is at present impossible to make the needed comparison of the written names of the figures, written presumably in Breu's autograph, with the only known specimen of the artist's handwriting, a document in the Augsburg archives.

An Attribution to Raphael.—In the thirty-sixth instalment of his notes on pictures in the royal collections, L. CUST brings forward as a possible portrait of Raphael by himself (Fig. 8) a picture

esque portraits, many showing North Italian traits, which modern criticism has rejected, but future study may tend to revindicate to the master. (*Burl. Mag.* XXIX, 1916, pp. 203-209; 8 figs.)

A New Cuyp.—In *Burl. Mag.* XXIX, 1916, pp. 255-256 (2 figs.), C. J. HOLMES publishes a painting by Cuyp, a Stable Interior, signed "A. C.," recently recognized in the National Gallery. It had originally masqueraded as a Wouvermans but later had been more reservedly labelled Dutch school. Sixteen such subjects by Cuyp, of which the present whereabouts are unknown, are given by De Groot and further finds similar to this are probable.

Two North Italian Drawings.—In *Burl. Mag.* XXIX, 1916, pp. 271-272 (2 figs.), T. BORENIUS publishes two North Italian drawings in the collection of Sir Edward Poynter. One is a pen and bistre drawing over red chalk, Two Groups of Ecclesiastics, in the characteristic style of Vittore Carpaccio. The other is a brush drawing in India ink and white on blue paper, Woman Standing, equally recognizable as by Bartolomeo Montagna. The former seems a study for a burial scene, the latter for a female saint; but no painting corresponding to either is known.

VALTOS, LEWIS.—**A Find of Viking Relics.**—In *Burl. Mag.* XXIX, 1916, pp. 241-242 (3 figs.), J. CURLE reports a find of Viking relics of the middle of the ninth century or later, after the Vikings had begun to settle and take on local influences in the Hebrides, at Valtos on the western coast of Lewis. The objects must have been deposited with a burial, probably of a woman. Their chief interest and the evidence for their dating is found in the mingling of the Scandinavian and Celtic streams of art, for beside a typical pair of Viking brooches with the chain to connect them were found a Celtic buckle and a penannular-headed pin, and also a disk-shaped ornament, probably for the belt of unique type, but of Celtic decoration.

UNITED STATES

BOSTON.—**Accessions to the Museum of Fine Arts.**—In *B. Mus. F. A.* XIV, 1916, p. 27 (fig.), The Boston Museum of Fine Arts announces the gift by Mrs. W. Scott Fitz of a little panel Crucifixion by Lippo Memmi. An important addition to the almost complete series of Van Dyck's etchings is the beautiful portrait of the artist (Fig 9) made as the title plate of the famous "Iconography." (*Ibid.* XIV, 1916, pp. 38-39; fig.)

CAMBRIDGE.—**Portrait by Van Dyck in the Fogg Museum.**—In *Art in America*, IV, 1916, pp. 268-276 (3 figs.), G. H. EDGELL writes on the recently acquired portrait by Van Dyck, dated 1620, in the Fogg Museum. It formerly was in the Kann collection. The coat of arms and the date allow the sitter to be identified as Nicolas Triest, lord of Auweghem.

NEW YORK.—**Italian Drawings in the Metropolitan Museum.**—In *The Print Collector's Quarterly*, VI, 1916, pp. 157-184 (12 figs.), G. S. HELLMAN writes on the drawings by Italian artists in the Metropolitan Museum. Works analyzed are: Annunciate Angel by Filippino Lippi, S. Nazaro by an anonymous Ferrarese master, Landscape by Campagnola, Bacchanal by Lorenzo Leonbruno, Europa and the Bull by Giulio Romano, so-called Holy Family by Francesco Primaticcio, Apparition of the Virgin by Tintoretto, Head of a Woman by Sebastiano del Piombo, Female Head by Federigo Barocci, Figures in Prayer by Federigo Zuccaro, Madonna by Camillo Procaccini, Annuncia-

tion to the Shepherds by Leandro Bassano, Male Figure by Annibale Caracci, Piazza by Guercino, and St. Mark's by Guardi. This list serves to illustrate the catholicity of the Metropolitan Museum's collection.



FIGURE 9.—PORTRAIT OF VAN DYCK, ETCHING, BOSTON

Acquisitions of the Metropolitan Museum.—In *B. Metr. Mus.* XI, 1916, pp. 146-147 (fig.), W. M. M. announces that the Metropolitan Museum has purchased the oldest French tapestry known, the Crucifixion of about 1300, from the Morgan collection. St. Nicholas Resuscitating the Three Youths, by Bicci di Lorenzo, a well-known predella panel, the mate of the miracle of

St. Nicholas already in the museum, has recently been added by gift to the permanent collection. (*Ibid.* XI, 1916, pp. 237-238; fig.) An Armenian Book of Gospels, dating from the thirteenth century, and a Spanish Romanesque relief are minor additions. (*Ibid.* XI, 1916, pp. 160, 267.)

Oriental Embroidery in the Metropolitan Museum.—In *B. Metr. Mus.* XI, 1916, pp. 262-263 (fig.), F. M. describes a small group of ecclesiastical embroideries from the Christian East in the Metropolitan Museum. One piece is newly acquired, a seventeenth century Armenian mitre of the crown type; its figure subjects are Christ and the twelve Apostles in an arcade round about and the four Evangelists in medallions in the four quadrants of the crown. A second piece, an *omophorion* of Syrian origin, is of interest because of its exceptional length, its nine New Testament scenes, and its Julian date 1338 in Cufic lettering. Another strip of Armenian embroidery is probably from a mitre. It represents Christ twice among the twelve apostles. One of the figures of Christ is in the middle and would thus come on the front, the other is at the end and would thus come on the back of the head. The subjects of two Byzantine liturgical cuffs are the recognition of the risen Christ.

Two French Gothic Tapestries.—In *Art in America*, V, 1916, pp. 27-34 (2 figs.), S. RUBINSTEIN publishes two late French Gothic tapestries in the Blumenthal collection, New York. Both date from about 1500, belong to the "*Dame à Licorne*" series, and probably are assignable to the school of the Loire though in this period monograms were not yet added. One, from the Mège collection, shows on a flowered ground a hunting scene, the other, from the Schutz collection, has on a similar ground a pastoral scene.

A Madonna by Piero di Cosimo.—A familiar tondo of the Madonna by Piero di Cosimo in the hands of Duveen Brothers, who acquired it from Mr



FIGURE 10.—DAVID BY DONATELLO, WIDENER COLLECTION

A. E. Street, London, is illustrated and discussed in *Burl. Mag.* XXIX, 1916, p. 351 (pl.). It shows the influence of Lorenzo di Credi and even of Hugo van der Goes. It is painted in oil and in a most remarkably perfect state of preservation.

PHILADELPHIA.—The Two Martelli Marbles.—At last the two remaining Martelli marbles, both important works of Italian Renaissance sculpture, the Donatello statue of David (Fig. 10) and the disputed Giovannino bust, (Fig. 11), have found their way to America, to the collection of Mr. J. E. Widener. In *Burl. Mag.* XXIX, 1916, pp. 197-198 (4 figs.), O. SIREN writes on the two, and agrees with Venturi and Raymond in assigning the latter to Desiderio, rather than with Bode to Rossellino. In *Art in America*, IV, 1916, pp. 358-366 (2 figs.), A. MARQUAND discusses the same pieces. He dates the



FIGURE 11.—BUST BY DESIDERIO DA SETTIGNANO, WIDENER COLLECTION

David about 1433 to 1440, but denies that the bronze statuette of the same subject at Berlin is from a preliminary sketch for the Martelli statue. The latter is more like the work of Donatello than is the bronze. The authorship of Desiderio for the Giovannino is proved by a comparison with the similar figure of the Marsuppini monument in S. Croce, Florence.

PROVIDENCE.—Medals Acquired by the School of Design.—Five important Renaissance medals have lately been given to the School of Design. Three are Italian: the medal of Alfonso V of Aragon by Christoforo di Ghermìa, that of Sigismondo Pandolfo di Malatesta by Matteo de' Pasti, and that of Pietro Aretino by Leon Leone. Two are French, and by the greatest French medallist, Natalis Rondot: the medal of Henry IV and Marie de Medici, 1603, and that of Francesco de' Medici, 1613. (*Bull. R. I. School of Design*, IV, 1916, pp. 5-6; 2 figs.)

SAINT LOUIS.—Acquisitions of the City Art Museum.—Recent additions to the City Art Museum of St. Louis are a painting, Dordrecht in Winter, by Jan van Goyen, dated 1643; two fifteenth century Spanish brocades, a cope and a chasuble, both embroidered with figure subjects; and a pair of Flemish Renaissance battle tapestries. (*Bulletin, City Art Museum, St. Louis*, II, 1916, No. 3, pp. 2-6; 3 figs.)

AMERICAN ARCHAEOLOGY

GENERAL AND MISCELLANEOUS

COLORADO.—Cliff Ruins in Fewkes Cañon, Mesa Verde National Park.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 96-117; 10 pls.; 3

figs.), J. W. FEWKES describes several pueblo ruins. The Oak-Tree House contained at least six kivas, four of which were well preserved. Three of these were of the vaulted type common in Cliff Palace while the fourth is unique. It consists of a semi-circular room with one straight wall, joined on the straight side by two passageways to a smaller rectangular room. The Painted House has many wall paintings of rain clouds, animals of various species, and human beings,—these are made by the application of red paint on white plaster. The pottery is mainly archaic black-and-white ware.

NORTH CAROLINA.—*Certain Mounds in Haywood County.*—In the *Holmes Anniversary Volume* (Washington, 1916, pp. 180-186; 5 pls.), G. G. HEYE tells of the excavation of certain mounds in the interest of the Museum of the American Indian.

OHIO.—*Exploration of the Tremper Mound in Scioto County.*—In *Holmes Anniversary Volume* (Washington, 1916, pp. 334-358; 5 pls.; 2 figs.), W. C. MILLS describes certain excavations in Ohio. The mound excavated belonged to the Hopewell culture. Cremation was the exclusive practice in the disposal of the dead. The ashes were placed in the prepared communal depositories. At least 375 individuals were represented. A great cache of 145 pipes, many of the effigy form, was found.

GUATEMALA.—*Latest Work of the School of American Archaeology at Quirigua.*—In *Holmes Anniversary Volume* (Washington, 1916, pp. 157-162; 13 pls.; fig.), E. L. HEWETT describes some recent excavations at Quirigua. The explorers found three different strata of culture, with deposits of silt between them. The two upper ones have buildings associated with them. The lower of these two cities he considers as much older than the later as this is older than the present settlement. The lowest level contained no remains of buildings. Its pottery was very different from that in the upper or Maya layers. One new *stella* was found. Its date is about five years earlier than any previously found on this site.

HONDURAS.—*A Contribution to the Archaeology of Middle America.*—In *Holmes Anniversary Volume* (Washington, 1916, pp. 137-141; pl.; 6 figs.), G. B. GORDON describes an alabaster vase from Honduras. The handles are pairs of animals, and the body of the vase has four zones of sculpturing of curious pattern.

MEXICO.—*Pottery of Casas Grandes District, Chihuahua.*—In *Holmes Anniversary Volume* (Washington, 1916, pp. 253-268; 7 pls.; 10 figs.), A. V. KIDDER describes the pottery of the Casas Grandes district, Chihuahua. There are four principal kinds of ware; the rough dark ware, the polished black ware, the red ware, and the painted ware. About seventy per cent. of the specimens are of the last class. There are jars, effigy vases, and true effigies. The designs are usually polychrome—red and black on light. He describes the various elements of design.

BRAZIL AND BRITISH GUIANA.—*Some South American Petroglyphs.*—In *Holmes Anniversary Volume* (Washington, 1916, pp. 88-95; 2 pls.; 5 figs.), W. C. FARABEE gives a short description of various rock-drawings in Brazil and British Guiana. He cites several theories as to their origin and purpose, and makes some suggestion as to how rock-drawings should be copied.

VENEZUELA.—*Notes on the Archaeology of Margarita Island.*—In *Cont. Mus. Amer. Ind.* II, v (28 pp.; 8 pls.; 15 figs.), T. DE BOOY describes kitchen

middens, reservoirs, and surface finds which he attributes to the Guaikerias. Among the objects collected were pottery vessels, pottery heads, stone mortars, a chipped arrowhead (which the writer claims to be the first ever found in the West Indies), stone axes of several types, and decorative objects of worked conch-shell.

New Data on the Archaeology of Venezuela.—In *Proc. Nat. Acad. of Sciences*, II, pp. 325-328, H. J. SPINDEN gives a brief report of a reconnaissance survey of Venezuela. Cultural relationships with the ancient peoples of the West Indies, Central America, and the regions of eastern Brazil were discovered. Several distinct archaeological provinces were found, though all of these possess important features in common.

ABBREVIATIONS

Abh.: Abhandlungen. *Allg. Ztg.*: Münchener Allgemeine Zeitung. *Alt. Or.*: Der alte Orient. *Am. Anthr.*: American Anthropologist. *Am. Archit.*: American Architect. *A.J.A.*: American Journal of Archaeology. *A. J. Num.*: American Journal of Numismatics. *A. J. Sem. Lang.*: American Journal of Semitic Languages and Literature. *Ami d. Mon.*: Ami des Monuments. *Ant. Denk.*: Antike Denkmäler. *Ann. Arch. Anth.*: Annals of Archaeology and Anthropology. *Ann. Scuol. II. Ath.*: Annuario della r. Scuola Archeologica di Atene e delle Missioni Italiane in Oriente. *Arch. Ael.*: Archaeologia Aeliana. *Arch. Anz.*: Archäologischer Anzeiger. *Ἀρχ. Ἐφ.*: Ἀρχαιολογική Ἐφημερίς. *Arch. Rec.*: Architectural Record. *Arch. Rel.*: Archiv für Religionswissenschaft. *Arch. Miss.*: Archives de Missions Scientifiques et Littéraires. *Arch. Stor. Art.*: Archivio Storico dell' Arte. *Athen.*: Athenaeum (of London). *Ath. Mitt.*: Mitteilungen d. k. d. Archaeol. Instituts, Athen. Abt.

Beitr. Assy.: Beiträge zur Assyriologie. *Ber. Kunsts.*: Amtliche Berichte aus den Königlichen Kunstsammlungen. *Berl. Akad.*: Preussische Akademie der Wissenschaften zu Berlin. *Berl. Phil. W.*: Berliner Philologische Wochenschrift. *Bibl. Stud.*: Biblische Studien. *Bibl. World*: The Biblical World. *B. Ac. Hist.*: Boletín de la real Academia de la Historia. *Boll. Arte.*: Bollettino d'Arte. *Boll. Num.*: Bollettino Italiano di Numismatica. *Bonn. Jb.*: Bonner Jahrbücher: Jahrbücher des Vereins von Altertumsfreunden im Rheinlande. *B.S.A.*: Annual of the British School at Athens. *B.S.R.*: Papers of the British School at Rome. *B. Arch. M.*: Bulletin Archéol. du Ministère. *B. Arch. C. T.*: Bulletin Archéologique du Comité des Travaux hist. et scient. *B.C.H.*: Bulletin de Correspondance Hellénique. *B. Inst. Ég.*: Bulletin de l'Institut Égyptien (Cairo). *B. Metr. Mus.*: Bulletin of the Metropolitan Museum of Art, New York. *B. Mus. Brux.*: Bulletin des Musées Royaux des arts décoratifs et industriels à Bruxelles. *B. Mus. F. A.*: Museum of Fine Arts Bulletin, Boston. *B. Num.*: Bulletin de Numismatique. *B. Soc. Ant. Fr.*: Bulletin de la Société des Antiquaires de France. *B. Soc. Anth.*: Bulletin de la Société d'Anthropologie de Paris. *B. Mon.*: Bulletin Monumental. *B. Com. Rom.*: Bollettino d. Commissione Archeologica Comunale di Roma. *B. Arch. Crist.*: Bollettino di Archeologia Cristiana. *B. Pal. It.*: Bollettino di Paleontologia Italiana. *Burl. Gaz.*: Burlington Gazette. *Burl. Mag.*: Burlington Magazine. *Byz. Z.*: Byzantinische Zeitschrift.

Chron. Arts.: Chronique des Arts. *Cl. Phil.*: Classical Philology. *Cl. R.*: Classical Review. *C. R. Acad. Insc.*: Comptes Rendus de l'Académie des Inscriptions et Belles-Lettres. *C.I.A.*: Corpus Inscriptionum Atticarum. *C.I.G.*: Corpus Inscriptionum Graecarum. *C.I.L.*: Corpus Inscriptionum Latinarum. *C.I.S.*: Corpus Inscriptionum Semiticarum.

Eph. Ep.: Ephemeris Epigraphica. *Eph. Sem. Ep.*: Ephemeris für Semitische Epigraphik. *Exp. Times*: The Expository Times.

Fornvänner: Fornvänner: meddelanden från K. Vitterhets Historie och Antikvitets Akademien.

Gaz. B.-A.: Gazette des Beaux-Arts. *G.D.I.*: Sammlung der griechischen Dialekt-Inschriften.

I.G.: Inscriptiones Graecae (for contents and numbering of volumes, cf. *A.J.A.* IX, 1905, pp. 96-97). *I.G.A.*: Inscriptiones Graecae Antiquissimae, ed. Roehl. *I. G. Arg.*: Inscriptiones Graecae Argolidis. *I. G. Ins.*: Inscriptiones Graecarum Insularum. *I. G. Sept.*: Inscriptiones Graeciae Septentrionalis. *I. G. Sic. It.*: Inscriptiones Graecae Siciliae et Italiae.

Jb. Arch. I.: Jahrbuch d. k. d. Archäol. Instituts. *Jb. Kl. All.*: Neue Jahrbücher für das klassische Altertum, Geschichte und deutsche Litteratur und für Pädagogik. *Jb. Kunsth. Samm.*: Jahrbuch der Kunsthistorischen Sammlungen des allerhöchsten Kaiserhauses. *Jb. Phil. Päd.*: Neue Jahrbücher für Philologie und Pädagogik (Fleckeisen's Jahrbücher). *Jb. Preuss. Kunsts.*: Jahrbuch d. k. Preuss. Kunstsammlungen. *Jh. Oest. Arch. I.*: Jahreshefte des oesterreichischen Archäologischen Instituts. *J. Asiat.*: Journal Asiatique. *J.A.O.S.*: Journal of American Oriental Society. *J. B. Archaeol.*: Journal of the British Archaeological Association. *J. B. Archit.*: Journal of the Royal Institute of British Architects. *J. Bibl. Lit.*: Journal of Biblical Literature. *J.H.S.*: Journal of Hellenic Studies. *J. Int. Arch. Num.*:

Διόθνης Ἐφημερίς τῆς νομισματικῆς ἀρχαιολογίας, Journal international d'archéologie numismatique (Athens).

Kb. Gesamtver.: Korrespondenzblatt des Gesamtvereins der deutschen Geschichts- und Altertumsvereine. *Klio*: Klio: Beiträge zur alten Geschichte. *Kunstchr.*: Kunstchronik.

Mb. Num. Ges. Wien: Monatsblatt der Numismatischen Gesellschaft in Wien. *Mh. f. Kunstw.*: Monatshefte für Kunstwissenschaft. *Mél. Arch. Hist.*: Mélanges d'Archéologie et d'Histoire (of French School in Rome). *Mél. Fac. Or.*: Mélanges de la Faculté Orientale, Beirut. *M. Acc. Modena*: Memorie della Regia Accademia di scienze, lettere ed arti in Modena. *M. Inst. Gen.*: Mémoires de l'Institut Genevois. *M. Soc. Ant. Fr.*: Mémoires de la Société des Antiquaires de France. *Mitt. Anth. Ges.*: Mitteilungen der anthropologischen Gesellschaft in Wien. *Mitt. C.-Comm.*: Mitteilungen der königlich-kaiserlichen Central-Commission für Erforschung und Erhaltung der Kunst- und historischen Denkmale. *Mitt. Or. Ges.*: Mitteilungen der deutschen Orient-Gesellschaft. *Mitt. Pal. V.*: Mitteilungen und Nachrichten des deutschen Palästina Vereins. *Mitt. Nassau*: Mitteilungen des Vereins für nassauische Altertumskunde und Geschichtsforschung. *Mitt. Vorderas. Ges.*: Mitteilungen der vorderasiatischen Gesellschaft. *Mon. Ant.*: Monumenti Antichi (of Accad. d. Lincei). *Mon. Piot*: Monuments et Mémoires pub. par l'Acad. des Inscriptions, etc. (Fondation Piot). *Mün. Akad.*: Königlich Bayerische Akademie der Wissenschaften, München. *Mün. Jb. Bild. K.*: Münchner Jahrbuch der bildenden Kunst.

N. D. Alt.: Nachrichten über deutsche Altertumskunde. *Nomisma*: Nomisma: Untersuchungen auf dem Gebiete der antiken Münzkunde. *Not. Scav.*: Notizie degli Scavi di Antichità. *Num. Chron.*: Numismatic Chronicle. *Num. Z.*: Numismatische Zeitschrift. *N. Arch. Ven.*: Nuovo Archivio Veneto. *N. Bull. Arch. Crist.*: Nuovo Bullettino di Archeologia cristiana.

Or. Lit.: Orientalistische Literaturzeitung. *Or. Lux.*: Ex Oriente Lux.

Pal. Ex. Fund.: Quarterly Statement of the Palestine Exploration Fund. *Πρακτικά*: Πρακτικά τῆς ἐν Ἀθήναις ἀρχαιολογικῆς ἐταιρείας. *Proc. Soc. Ant.*: Proceedings of the Society of Antiquaries.

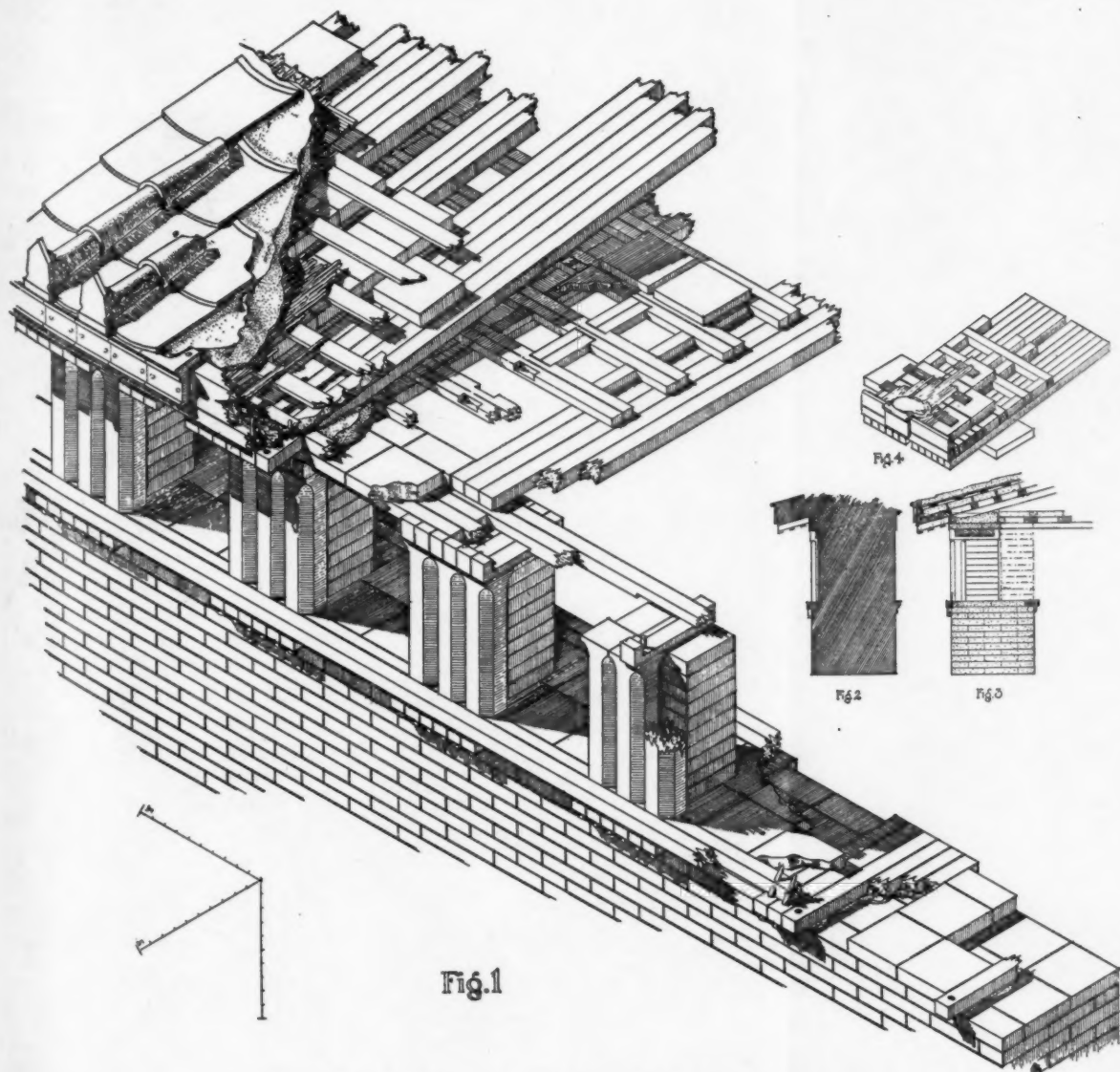
Rass. d'Arte: Rassegna d'Arte. *Rec. Past*: Records of the Past. *R. Tr. Eg. Assyr.*: Recueil de travaux relatifs à la philologie et à l'archéologie égyptiennes et assyriennes. *Reliq.*: Reliquary and Illustrated Archaeologist. *Rend. Acc. Lincei*: Rendiconti d. r. Accademia dei Lincei. *Rep. f. K.*: Repertorium für Kunstwissenschaft. *R. Assoc. Barc.*: Revista de la Asociación artistico-arqueologica Barcelonesa. *R. Arch. Bibl. Mus.*: Revista di Archivos Bibliotecas, y Museos. *R. Arch.*: Revue Archéologique. *R. Art Anc. Mod.*: Revue de l'Art ancien et moderne. *R. Art. Chrét.*: Revue de l'Art Chrétien. *R. Belge Num.*: Revue Belge de Numismatique. *R. Bibl.*: Revue Biblique Internationale. *R. Ép.*: Revue Epigraphique. *R. Ét. Anc.*: Revue des Études Anciennes. *R. Ét. Gr.*: Revue des Études Grecques. *R. Ét. J.*: Revue des Études Juives. *R. Hist. Rel.*: Revue de l'Histoire des Religions. *R. Num.*: Revue Numismatique. *R. Or. Lat.*: Revue de l'Orient Latin. *R. Sém.*: Revue Sémitique. *R. Suisse Num.*: Revue Suisse de Numismatique. *Rh. Mus.*: Rheinisches Museum für Philologie, Neue Folge. *R. Abruzz.*: Rivista Abruzzese di Scienze, Lettere ed Arte. *R. Ital. Num.*: Rivista Italiana Numismatica. *R. Stor. Ant.*: Rivista di Storia Antica. *R. Stor. Calabr.*: Rivista Storica Calabrese. *R. Stor. Ital.*: Rivista Storica Italiana. *Röm.-Germ. Forsch.*: Bericht über die Fortschritte der Römisch-Germanischen Forschung. *Röm.-Germ. Kb.*: Römisch-Germanisches Korrespondenzblatt. *Röm. Mitt.*: Mitteilungen d. k. d. Archäol. Instituts, Röm. Abt. *Röm. Quart.*: Römische Quartalschrift für christliche Altertumskunde und für Kirchengeschichte.

Sächs. Ges.: Sächsische Gesellschaft (Leipzig). *Sitzb.*: Sitzungsberichte. *S. Bibl. Arch.*: Society of Biblical Archaeology, Proceedings.

Voss. Ztg.: Vossische Zeitung.

W. kl. Phil.: Wochenschrift für klassische Philologie.

Z. D. Pal. V.: Zeitschrift des Deutschen Palästina Vereins. *Z. Aeg. Sp. Alt.*: Zeitschrift für Aegyptische Sprache und Altertumskunde. *Z. Alttest. Wiss.*: Zeitschrift für alttestamentliche Wissenschaft. *Z. Assyr.*: Zeitschrift für Assyriologie. *Z. Bild. K.*: Zeitschrift für Bildende Kunst. *Z. Ethn.*: Zeitschrift für Ethnologie. *Z. Morgenl.*: Wiener Zeitschrift für die Kunde des Morgenlands. *Z. Morgenl. Ges.*: Zeitschrift der deutschen Morgenländischen Gesellschaft. *Z. Mün. Alt.*: Zeitschrift des Münchener Alterthumsvereins. *Z. Num.*: Zeitschrift für Numismatik.



HYPOTHETICAL DORIC ENTABLATURE OF BRICK AND WOOD

THE ORIGIN OF THE DORIC ENTABLATURE¹

[PLATE VII]

FIXITY OF DORIC FORMS.—Of all the architectural forms which have apparently no definite structural significance, there is none which has persisted with so little variation as the entablature of the Greek Doric order. Modern copies of course prove nothing, our taste being as eclectic as that of the Romans; but that the Greeks themselves used this form continuously for a period of over four hundred years without showing the slightest variation in the arrangement of regulae, taenia, triglyphs, metopes, mutules, and corona, or even in the number and disposition of the guttae, and with practically no change in the relative proportions of these parts, is a fact unparalleled in architectural history.²

Even the column of the Doric order shows much greater variation than this entablature, not only in its proportions, but in the number of its channels, the number of the annulae below the echinus, the occasional substitution of a decorated neck cove for these latter, and so forth.

This remarkable fixity in a form which frankly contradicts in many cases the stone construction it ornaments, must have been due either to the parallel existence of similar forms in another material,—where structural reasons prevented change,—from which the stone forms were continually and literally imitated; or to a tradition derived from some such anterior structural forms, that had endured long enough to become artistically, if not actually, sacred to the Greeks. It is, of course, altogether possible that throughout the historic period buildings were erected in Greece with structural Doric entablatures of wood, crude brick,

¹ I beg to acknowledge the very helpful criticisms and suggestions which I have received from Professor Bates of the University of Pennsylvania, and from Dr. Caskey of the Boston Museum of Fine Arts.

² Such exceptions as the temples C and D at Selinunte, where the mutules are alternately large and small, are, as will be shown later, only a special form of the general arrangement.

terra-cotta, or other material, and that these furnished the models for the temples in stone, but it is not customary to imitate a meaner material in a more magnificent one for a long period of time, unless the former has first become venerable by its antiquity. Moreover, the only direct evidence that we have for a Doric entablature in wood is the reference by Pausanias to that of the temple of Hera at Olympia,¹ which, according to a legend he mentions, was built eight years after Oxylos had captured Elis, and certainly must have appeared very old in his day.

The known fixity of form of the Doric entablature in stone from the seventh century B.C. for at least four centuries indicates, therefore, that a period at least equal in length, during which this form was developed structurally and made classic in some other material, must have elapsed before this date; for the rate of development of architectural and artistic forms is always much slower during the first phases of a civilization. If this be true, the origin of the Doric entablature cannot be much posterior to the Dorian invasion, and it seems altogether probable that if no traces of it are to be found in the last architecture of the previous inhabitants, the germs of it at least must have been brought down from the north by the invaders.

Nothing whatever is known of the architecture of these north-erners prior to their descent into Greece, but there are quite copious documents for the late Minoan architecture both in Crete and on the mainland, representations in terra-cotta, metal, and frescoes, as well as considerable remains of the buildings themselves; so that by considering this alternative alone it should be possible to decide the probable source of origin.

MINOAN ARCHITECTURAL FORMS.—Fortunately the late Minoan artists were decided realists. Freedom from convention and obvious study from life are strikingly shown in their representations of men and animals. Even in vase paintings, where the natural tendency would be toward formal decoration, we find plant and shell forms of surprising faithfulness to nature.² There is, therefore, every reason to believe that the fresco representations of architecture give a true idea of the architectural forms of the Minoan period. This truthfulness of course does not apply to

¹ Pausanias, V, 16, 1. The existence of a wooden column obviously argues the existence of a wooden entablature above it.

² Bulle. *Orchomenos*, p. 75, in *Abh. Münch. Akad., Philos.-Philol. Kl.*, XXIV.

matters of scale, for until the modern discovery of correct linear perspective artists have never been at much pains to make the scale of their architecture agree with that of their figures.

Except for minor variations the architecture represented in Minoan art is of a single well marked type (Fig. 1).¹ It shows us a basement of squared stones; above this an open portico consisting of two side piers, or ends of walls, undoubtedly of unbaked brick reinforced by longitudinal and transverse beams of wood;² between these, one or more columns, with simple block bases, shafts larger at the top than at the bottom, and large, rather bulbous capitals; supported by these side walls and columns, a transverse

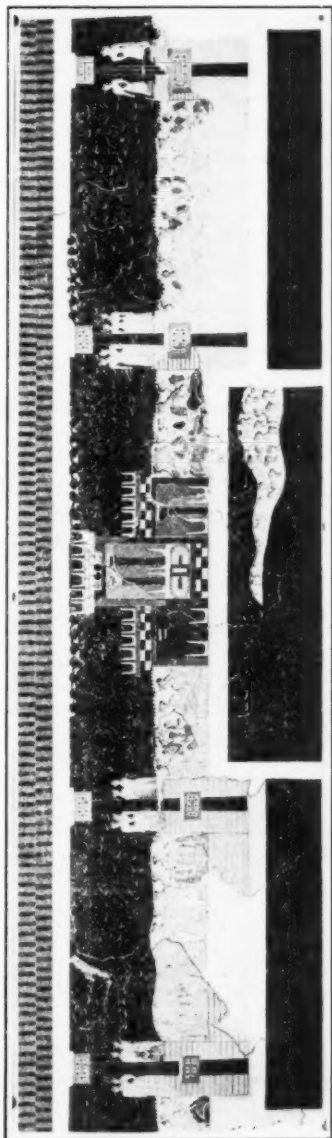


FIGURE 1.—FRESCO FROM CNOSSUS. (From a restoration by Giffiéron, in the Museum of the University of Pennsylvania)

¹ Fresco from Cnossus, Evans, *B. S. A.* X, 2; 'Mycenaean Tree and Pillar Cult,' *J. H. S.* XXI, 1901, pl. V. Gold plaques from Mycenae, Schliemann, *Mycenae*, fig. 423.

² The black marks with thickened ends which cross these walls or piers at regular intervals have been correctly interpreted thus by Bulle, *Orchomenos*, p. 73.

lintel beam, which in turn supports a series of round beams laid close together at right angles to it, and on these again a thick horizontal roof, presumably of clay. The face of this thick roof is usually covered with large black and white checkers, probably indicating masonry (or plaster painted in imitation of masonry) which rests on a beam laid across the ends of the round roof-timbers. On either side of this portico there is usually a smaller portico, never with more than one column but otherwise exactly similar in arrangement to the central portico. It has been suggested by Noack (*Homerische Paläste*, p. 78) that

these lateral porticoes represent side views of the central portico, but as such an hypothesis would not affect the architectural forms shown, it does not concern us here.

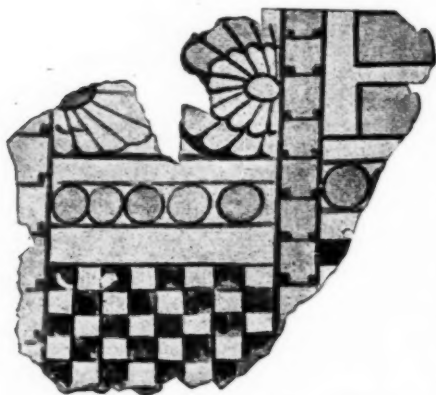


FIGURE 2.—FRAGMENT FROM ORCHOMENOS.
(After Dussaud)

A number of other remains which do not show whole buildings, indicate these same architectural features. The clay walls reinforced with imbedded beams are indicated in fresco fragments found at Orchomenos (Fig. 2) and at Tiryns¹. The columns are shown on a fresco fragment from Cnossus², are carved on the Lions' gate at Mycenae, and flank the door to the so-called "Treasury of Atreus" at Mycenae. The lintel with the round ends of the roof beams above it, is shown in fresco fragments from Tiryns, from Orchomenos (Fig. 2) and from Cnossus,³ on the painted sarcophagus from Hagia Triada, on a gold plaque

¹ Bulle, *Orchomenos*, pl. XXVIII, 1. K.D. Arch. Inst. in Athen, *Tiryns*, II, p. 137, fig. 58; pl. XVI, 5.

² *B.S.A.* X, pl. II.

³ Tiryns, K.D. Arch. Inst. in Athen, *Tiryns*, II, pls. I; XI, 9; XVI, 5. Orchomenos, Bulle, *Orchomenos*, pl. XXVIII, 1 and 4. Cnossus, *B.S.A.* X, p. 42, fig. 14.

from Volo, and on a seal impression from Cnossus¹; it is carved on the façade of a grave at Mycenae, and represented schematically above the column on the Lions' gate at Mycenae and on small terra-cotta columns from Cnossus.²

Aside from these recurrent architectural features which may be considered typical of monumental palace or temple architecture, a series of terra-cotta plaques found at Cnossus³ indicates a type of civil or domestic architecture. These plaques represent buildings of two or more stories with doors and windows heavily framed in wood, and with the ends of the beams, usually round, which are used for the floors and roofs and for reinforcing the brick walls, clearly marked. In several cases a small rectangular mass is shown above the roof. This in all probability indicates a covering for the head of a stairway by which the occupants mounted to the flat top of the house, similar to the covered stair-heads so characteristic of eastern domestic roofs at the present day.

One other architectural form is occasionally met with, though regularly found neither in the monumental nor domestic architecture. This is a column which tapers upward instead of downward and is surmounted by a species of cubical cap (Fig. 1).⁴ This cap is decorated with a series of round spots following the rectangular outline of its face, and apparently shows a continuation of the shaft through a rectangular sinkage in the centre of this face.⁵ A similar form, though here used at the bottom instead of the top of a shaft, is found on a fragment of a steatite vessel from Cnossus (Fig. 7).⁶ This peculiar type of column has probably a very special use and will be considered later.

The Minoan architecture as indicated by the artists is, then, extremely simple straightforward construction; and the truthfulness of its representation is testified by the actual remains. These show us uniformly, foundation and basement walls of stone in squared coursed blocks; on these, walls of sun-dried brick reinforced by longitudinal and transverse beams; windows and doors

¹ Hagia Triada, *Mon. Ant.* XIX, 1908, pl. II. Volo, 'Εφ. 'Αρχ. 1906, pl. 14. Cnossus, *B.S.A.* XI, p. 12, fig. 5.

² Mycenae, Perrot and Chipiez, *Histoire de l'Art*, VI, 627, fig. 275. Cnossus, *B.S.A.* VIII, p. 29, fig. 14.

³ *B.S.A.* VIII, pp. 16-17, fig. 9b.

⁴ Seal impression from Cnossus, *B.S.A.* IX, fig. 35. Steatite rhyton from Hagia Triada, *Rend. Acc. Lincei*, XII, fasc. 70, p. 17.

⁵ Miniature fresco from Cnossus, Candia Museum.

⁶ *B.S.A.* IX, p. 129, fig. 85.

in these walls framed in heavy timbers;¹ and open porticoes flanked by walls and spanned by lintels borne on one or two wooden columns. The wood work and the columns have of course disappeared, but their positions are clearly indicated in the walls and on the floors, and the actual form of the columns (tapering slightly downward) is proven by their impressions in encasing walls, built about them before their destruction.² Being of wood the roof constructions have left no remains, but the literalness of the other architectural indications, together with the natural simplicity of such a construction, leaves no doubt that the lintels or great beams, round³ or square,⁴ bore other round beams laid close together, on which a thick flat layer of clay served as protection from the sun and the occasional rains.

SURVIVALS OF MINOAN FORMS.—The most striking support to this analysis of Minoan architectural forms is given by a series of examples showing their persistence down to the present day in Asia Minor, where the earlier civilization was never overrun by the Achaeans, as in Greece and Crete. A coin from Cyprus representing the temple of Paphos⁵ shows exactly the Minoan portico flanked by smaller porticoes; the tombs of Lycia duplicate in stone the heavy rectangular framework of Minoan doors and windows, and show flat roofs carried on juxtaposed round beams projecting above square lintels, in exactly the Minoan manner (Fig. 3).⁶ The Ionian entablature, found as far as Persia to the east and Athens, in the porch of the Caryatids, to the west, which substitutes slightly separated square roof beams for the earlier round ones, and an architrave of superposed beams for the simple lintel, is an obvious derivative. And at the present day the wall of clay reinforced with wood,⁷ the wood column on a stone base, and the round roof beams borne on a wooden lintel and bearing a flat clay roof, are of constant occurrence in the Mazenderan.⁸

¹ *B.S.A.* VIII, p. 64, fig. 31; cf. p. 55, fig. 29.

² *B.S.A.* XI, p. 7.

³ Palace, Cnossus, *B.S.A.* VII, pp. 107, 117, Royal Villa, Cnossus, *B.S.A.* IX, p. 151, pl. I.

⁴ Royal Villa, Cnossus, *B.S.A.* IX, p. 151, pl. I.

⁵ Perrot and Chipiez, *op. cit.* III, p. 120, fig. 58; p. 266, fig. 199.

⁶ Perrot and Chipiez, *op. cit.* V, pp. 363-364, figs. 249, 250. Noack: *Baukunst des Altertums*, pl. 60.

⁷ Perrot and Chipiez, *op. cit.* VI, pp. 485-486, fig. 180.

⁸ Perrot and Chipiez, *op. cit.* V, p. 498, fig. 319.

FRANKNESS OF MINOAN ARCHITECTURE.—Throughout this Minoan architecture it should be especially noted that there is no attempt whatever to disguise the structural members or to simulate them where they do not actually occur. There is even a distinct effort to indicate them where they would naturally be hidden. For instance, it would be quite unreasonable to leave the walls of clay and timber exposed to the weather, and we have definite evidence that they were regularly given a protecting coat of stucco. But the frescoes and the terra-cotta plaques indicate with perfect clearness the timbers in these walls, which must have been covered

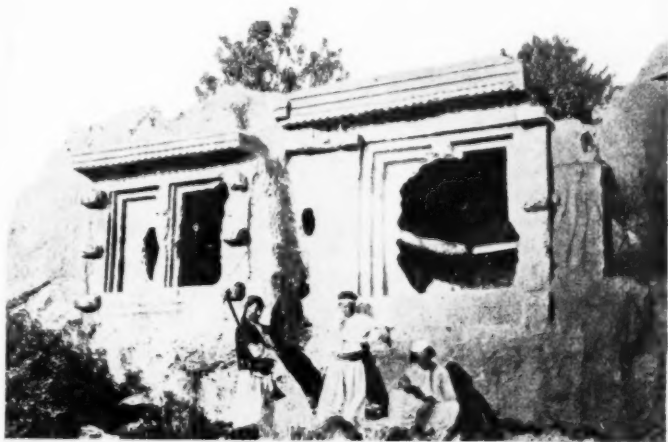


FIGURE 3.—LYCIAN TOMBS AT PORT TRISTOMO

from the eyes. The obvious explanation is, that having concealed the construction for practical reasons, the Minoan architect revealed it again by painting the timbers on the stucco, so that the Minoan eye would be satisfied by seeing a wall construction which it perfectly understood.¹ Even in the palace interiors large timbers are constantly represented in the frescoes. These were undoubtedly painted directly over real timbers imbedded in the wall, so that the construction should be revealed throughout.² This literalness is altogether in keeping with the realism of Minoan decoration.

¹ Bulle, *Orchomenos*, p. 97.

² K.D. Arch. Inst. in Athens, *Tiryns*, II, pl. VIII.

A second point to be observed is that the Minoan order has no frieze in the classic sense. The frieze in classic architecture is a horizontal band surmounting the architrave and surmounted by the cornice. It may be considered as marking the space occupied by the roof beams which rest upon the architrave,—the usual interpretation of the Doric frieze,—or as a band introduced between these beams and the architrave, as in the classic Ionic and Corinthian orders where the roof beams, represented by the dentils, form part of the cornice. If we use the word in the first sense, then the Minoan frieze consists invariably of a series of tangent circles, the round ends of the roof beams (Figs. 1 and 2). If in the second sense, then, as is the case with the Asiatic-Ionic and Persian orders, the entablature has no frieze at all.

It seems altogether improbable that so literal constructionalists would have ever disguised their round beam ends behind such a decoration as the alternation of rectangular triglyphs and metopes characteristic of the Doric frieze, or that they would have introduced a purely decorative band between the upper and lower members of their construction, and then,—since the Doric cornice has no dentils,—removed all traces of this upper member.

SUGGESTED RESEMBLANCES TO THE DORIC ENTABLATURE.—In spite of this improbability a number of archaeologists have claimed to find in Minoan forms the prototype of the triglyphs and metopes, and Perrot and Chipiez have developed with great ingenuity and at considerable length a transition from one to the other.¹

Pernier and Mosso² claim that the decorative form of the Doric frieze was derived from certain seats in the vestibule of the southern wing of the palace of Phaestus (Fig. 4). These seats, or rather stone benches, have horizontal tops and vertical faces composed of rectangular slabs of alabaster. In the vertical faces heavy slabs, higher than they are wide, alternate with thinner slabs, longer than they are high, and both vertical and horizontal slabs are decorated with incised lines running in the long direction of the slab. The appearance is certainly suggestive of triglyphs and metopes, especially as the vertical slabs are divided into three parts by two channels heavier than the other incised lines. But to base an architectural derivation on a mere resemblance of form is extremely rash. The alternation of

¹ *Op. cit.*, VI, pp. 710 ff.

² Pernier, *Mon. Ant.* XII, 1902, p. 48, fig. 13. Mosso, *Palaces of Crete*, p. 61.

vertical supporting members and long intermediate panels is the most obvious and suitable method of constructing a thin partition of a material like alabaster, which is easily worked into thin slabs; and the incised lines in the direction of greatest length are the most natural form of ornamentation. But it would be neither obvious nor suitable for the late Minoan or semi-barbarous early Greek builders to take a structural motive altogether suitable to bench fronts of alabaster, and reproducing it in wood (a material for which it is totally unsuited, the manufacture of boards being rare and difficult among primitive peoples), to introduce it as a non-structural element above the columns. It is equally improbable that they should have totally reorganized the construction of the entablature to allow it to present the decorative appearance of the front of a bench.

THE HALF-ROSETTE ORNAMENT.—Dörpfeld, Perrot and Chipiez, and Evans¹ find the inspiration for the alternation of triglyphs and metopes in the "half-rosette ornament" first

brought to light in the famous "alabaster frieze" found at Tiryns. The "half-rosette ornament" consists of a series of elongated rosettes, each of which is divided in the centre by a wide vertically striped band. This vertical division is held to correspond to a triglyph, the horizontal panel between two vertical divisions, occupied by two half-rosettes, tangent, or nearly tangent to each other, corresponding to a metope. This ornament is used in decoration as a unit composed either of one vertical division with a half-rosette on each side (Fig. 1), or of two vertical divisions with two half-rosettes between them (Fig. 2). It is also found as a running motive of vertical divisions alternating with two half-rosettes.

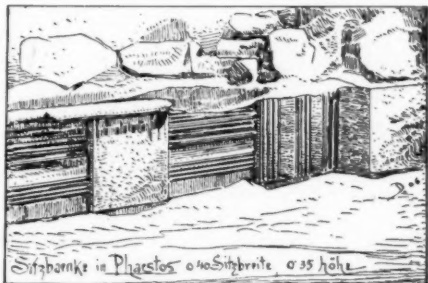


FIGURE 4.—BENCH AT PHAESTUS
(After Durm)

¹ Dörpfeld in Schliemann, *Tiryns*, p. 284. Perrot and Chipiez, *loc. cit.* Evans, *J.H.S.* XXI. 1901, p. 195.

Now if this ornament were found to be a free decorative motive without structural significance, which might be painted or carved almost anywhere, like the spiral or wave pattern, it might quite conceivably have been used to decorate a lintel, or as a band around the upper part of a wall, and thence have become a band above the lintel. The question resolves itself into an investigation of the exact character and use of the half-rossette ornament.

The examples of this ornament so far brought to light are:

- I. Alabaster "frieze" with blue glass inlays, from Tiryns (Schliemann, *Tiryns*, pl. IV; Durm, *Baukunst der Griechen*,³ *Handbuch der Architektur* II, 1, pl. II; Perrot and Chipiez, *Histoire de l'art*, VI, p. 549, fig. 230 and pl. XVII, fig. 1).
- II. Red breccia "frieze" from Mycenae, Tomb I (Schliemann, *Mycenae*, fig. 151; Perrot and Chipiez, *op. cit.* VI, p. 547, fig. 227 and p. 627, fig. 276).
- III. Red breccia "frieze" from Mycenae, Tomb I (Perrot and Chipiez, *op. cit.* VI, p. 628, fig. 277).
- IV. Red limestone "frieze" from Cnossus (*B.S.A.* VII, p. 55, fig. 16; Mosso, *Palaces of Crete*, p. 179, fig. 80).
- V. Ivory plaque from Mycenae ('Εφ. 'Αρχ. 1888, pl. VIII, fig. 11; Perrot and Chipiez, *op. cit.* VI, p. 547, fig. 226).
- VI. Glass ornament from Tomb at Menidi (*Das Kuppelgrab bei Menidi*, pl. III, fig. 24; Perrot and Chipiez, *op. cit.* VI, p. 548, fig. 228).
- VII. Gold models of façades from Mycenae (Schliemann, *Mycenae*, fig. 423).
- VIII. Fresco from Cnossus (Fig 1) (*J.H.S.* XXI, pl. V, and fig. 66).
- IX. Fresco from Orchomenos (Fig. 2) (Bulle, *Orchomenos*, pl. XXVIII, 1).
- X. Fresco fragments from Tiryns (K.D. Arch. Inst. in Athen, *Tiryns*, II, p. 137, fig. 58).
- XI. Fresco fragments from Cnossus (not pictured or well described, *B.S.A.* VII, p. 108; VIII, p. 75; X, p. 41).
- XII. Vase from royal Tomb, Isopata (Evans, 'Prehistoric Tombs at Knossos,' *Archaeologia*, LIX, p. 549, fig. 144).

No. I, when discovered, was supposed to be a decorative band which had originally ornamented the upper part of the wall, and had slipped from there to the position it occupied on the ground;

but later investigations point to its having been the front face of a stone bench exactly similar to those found at Phaestus.¹ Even Dörpfeld has changed from the earlier idea and considers that the original position was on the ground where found.² The original position and purpose of Nos. II, III, and IV are altogether conjectural, though to judge from their material they probably formed part of some architectural structure or decoration. No. V might have formed part of a box or miniature shrine, and No. VI was probably either an amulet, an inlay in a box or miniature shrine, or an element in a species of flat picture similar to those formed by the terra-cotta house plaques and marine objects found at Cnossus. In No. VII the half-rosette ornament occupies a position above the main central portion of the triple façade and has been variously considered to represent a clear-story with windows or shutters,³ or an altar placed upon the roof.⁴ In Nos. VIII, IX and X the half-rosette ornament invariably represents some architectural feature, it being in juxtaposition with the conventional representation of brick and timber walls. And in No. XII alone can it be definitely said to be used as pure ornament. Even here, as Evans notes,⁵ the presence of black and white checkers, which on the frescoes represent stone work and are very uncommon in vase painting, points to its being an architectural motive. The fact that the half-rosette ornament is never found among the variety of decorative bands so freely used in Minoan frescoes indicates strongly that it had a definite significance to the artists of these decorations. A form which represented a particular architectural feature could only be used in its proper place in their pictures of palaces or temples, and, being realists, these artists could no more use it as a motive of free decoration than they would have so used their conventional representations of brick and timber walls or of the round roof beams of the entablature.

Moreover, this half-rosette ornament by itself has apparently no religious significance, as it is never found used talismanically on seals, coffins, etc., as are the double-headed axe and the figure 8 shield. No. VI of the examples cited is the only one which

¹ K.D. Arch. Inst. Athen, *Tiryns*, I, p. 37 and note 2.

² Schuchhardt, *Schliemann's Excavations*, p. 117 (English translation).

³ Schuchhardt, *op. cit.* p. 200.

⁴ Evans, *J.H.S.* XXI, 1901, p. 191.

⁵ 'Prehistoric Tombs of Knossos,' *Archaeologia*, LIX, p. 550 and note a.

gives the slightest suggestion of having had intrinsic magic virtue,¹ so that the probabilities are that in this case, too, the half-rosettes formed part of some larger composition.

POSITION OF THE HALF-ROSETTE ORNAMENT.—If, then, this motive must be considered not as free decoration or as a religious emblem, but rather as a definite architectural form, it should have a definite position in relation to other architectural forms and a definite underlying structural significance. If this position prove to be at the upper part of a wall, its right to be considered as the prototype of the Doric frieze would seem to be fairly founded. Nos. VII and IX (Fig. 2) do show it to be above some sort of architectural structure, though in No. IX it is difficult to say just what this structure is, on account of the incompleteness of the fragment. On the other hand, No. VIII (Fig. 1) shows it definitely at the foot of the column, and No. I, the only real example found *in situ*, rested upon the ground. The original positions of the other examples are indeterminate, owing to their detached or fragmentary condition.

Close analysis will show that the known positions are not so various as they seem, for while No. IX unquestionably is placed above some sort of a wall, it is important to notice that directly below it is a row of round beam ends between an upper and a lower transverse beam (Fig. 2). This indicates that the half-rosette ornament does not form the upper part of the wall below it, but is placed directly above the ceiling of the story to which that lower wall belongs. Owing to the incompleteness of the fragment it is impossible to say whether its position is on a roof, as in No. VII, or on a main floor, as in No. VIII, with the black and white checkers below belonging to a basement or foundation wall. In either case its position is definitely not that of a frieze, which

¹ Evans, 'Prehistoric Tombs of Knossos,' p. 550, considers that the half-rosettes on No. XII are conventionalizations of the sacred double-axe. Such an extreme conventionalization would be very unusual for the realistic Minoans, especially since no intermediate steps have been found. Moreover, Nos. VII, IX, and X show the half-rosettes with their rectangular sides away from each other rather than joined by an intermediate vertical bar, while No. I and even the pattern on No. XII itself terminate in several places with a similar single half-rosette. This would be impossible, if the unit, consisting of two half-rosettes joined by a vertical bar (which would be the integral form, if derived from the double-axe), had any symbolic value. The axelike form in the centre of these rosettes on No. XII must be considered then as simply one of several insignificant variants to be found in the internal decoration of this motive.

would of necessity be below the cornice, marked by the round beam ends. Furthermore, the Minoan roofs, flat terraces, were unquestionably much used as uncovered floors, so that there is no intrinsic difference in the position of an object placed upon a floor or upon a roof.

Having settled the position of the half-rosette ornament, and knowing from No. I that its structure consisted of thin slabs placed on edge, the only remaining problem is as to its function. No. I has been considered to be the front of a bench, or, by others, to be a decorative dado¹ while in No. VII the ornament is held to mark the front of an altar.

THE HORNS OF CONSECRATION.—Some light may be thrown on the function of this decorated panel work by the relation it bears to another characteristic Minoan object, the so-called "horns of consecration." In Nos. VII and VIII (Fig. 1), the "horns of consecration" are shown directly above the half-rosette panels. In the other fresco fragments the tops of the half-rosette bands are missing, but from the marked uniformity of Minoan representations it seems quite likely that here also they were surmounted by the famous horns.

The exact function of these horns is not definitely known, though it is generally admitted that they were of some religious significance, being regularly shown on representations of altars and in connection with the two-headed axe and other emblems of divinity. The inference from this is that, whenever they are represented in a scene, the scene is a religious one, and any buildings in which they are shown must be shrines. This inference is ably combatted by Bulle,² who points out that on account of the omnipresence of this symbol one would be forced to the improbable conclusion that the Minoan artists never represented any architecture that was not religious. The famous miniature fresco from Cnossus (Fig. 1) seems to him much more probably a garden party with a court pavilion in the centre than a sacred ceremonial scene, in spite of an abundance of the "horns of consecration" in and on the pavilion. Certainly it would not be natural in depicting a sacred rite to devote all the attention to the audience and none to the ceremony itself.

¹ K. D. Arch. Inst. in Athen, *Tiryns*, I, p. 37. Durm, *Jh. Oest. Arch. I. X*, 1907, p. 68. Bulle, *Orchomenos*, p. 84.

² *Orchomenos*, pp. 77-78.

His conclusion is that while the horns were actually sacred objects, those shown in connection with architecture were not the objects themselves, but representations of them, painted upon the walls of secular buildings for talismanic purposes, just as the double-axe is frequently found incised on the stones of the palace of Cnossus.¹ This conclusion is open to two objections. In the first place, in the considerable amount of fresco decoration from Minoan palaces which has been found, there are nowhere any "horns of consecration," though to judge from the miniature frescoes they should have been painted everywhere; nor are they anywhere found cut in the stonework. In the second place, the miniature frescoes always show them along the floor line.² Now it is inconceivable that a sacred emblem should be painted along the base of a wall, where it could be seen with difficulty and would be particularly exposed to damage. It is evident, then, that these objects were not mere paintings but possessed three dimensions, and were always shown in frescoes upon the floor, or roof, or upon an altar, because they had to rest upon a horizontal surface. If we admit Bulle's reasonable contention that some of the structures depicted must be of a secular character, then we are forced to the conclusion that the "horns of consecration" were objects used sometimes with a religious purpose and sometimes with a secular one, perhaps honorific; in the same way that the figure 8 shield, which is often a religious emblem, must certainly have had an utilitarian function. This double rôle seems probable.

Several actual examples of "horns of consecration" have been found in Crete.³ These are of stone, stucco, or clay with a stucco coating, varying in size from 20 cm. to 40 cm. across; in three cases at least they were found in shrines (Fig. 5). By comparing the rarity of these objects with the profusion in which they are depicted, it becomes evident that the great majority of "horns of consecration" were made of some perishable material, such as wood, and that those found were copies of the utilitarian article made for sacred purposes in another material and probably of smaller size, like the many votive objects found in Cretan shrines.

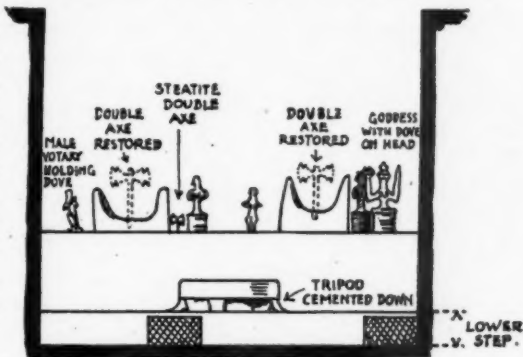
HORNS OF CONSECRATION NOT OFFERINGS NOR HOLDERS OF OFFERINGS.—It has been suggested by Evans that these horns

¹ Evans, *J.H.S.* XXI, 1901, p. 110, fig. 5.

² *B.S.A.* X. pl. II; *J.H.S.* XXI, pl. V; etc.

³ Cnossus, *B.S.A.* VIII, pp. 96 ff., fig. 55; IX, p. 12; XI, p. 8. Palaikastro, *B.S.A.* VIII, p. 314, fig. 27. Gournia, Hawes, *Gournia*, pl. XI, 25.

were conventional derivations from the actual horns of sacrificial oxen, set before the altar as an offering.¹ The resemblance is obvious, but apart from the fact that such an explanation would be incompatible with any secular use, it absolutely ignores the ardent realism of the Minoan artists. The alternation of bulls' heads and "horns of consecration" on a vase from Old Salamis,² instead of supporting Evans' theory, proves the contrary; for why should a reproduction of bulls' horns be represented at the same time as the bulls' horns themselves? Other more reasonable suggestions are, that they were a species of loaf or cake used for offerings, or a basket or bowl to hold offerings.



With both these explanations secular use would be perfectly possible, but neither suggestion is supported by the evidence at hand. In the first place in the shrine discovered at Knossos (Fig. 5), although a vase or dish for offerings stood in front of the altar, the horns were not in or by this vase, but were on the altar itself. Moreover, though various scenes represent votaries before altars, they are never shown holding or offering "horns of consecration," the latter being already upon the altar.³ In the second place, the horns are never shown containing offerings, but are frequently shown containing the god himself in the aniconic form of a tree (Fig. 6), a cone, a double-headed axe, etc.;⁴ and two found on an

¹ Evans, *J.H.S.* XXI, 1901, p. 137.

² Evans, *op. cit.* p. 107, fig. 3.

³ *B.S.A.* IX, fig. 85.

⁴ Painted larnax, Palaikastro, *B.S.A.* VIII, pl. XVIII; Vase fragment, Knossos, *B.S.A.* IX, fig. 71; Vase, Old Salamis, Evans, *J.H.S.* XXI, 1901, pp. 90 ff., figs. 1, 3, 20, 21, 25, 31.

altar of Cnossus have holes in them, evidently for the insertion of the handles of such sacred axes (Fig. 5). Also, the famous sarcophagus from Hagia Triada¹ indicates that regular baskets were used for carrying offerings.

The "horns of consecration" were, then, not horns except that in Minoan representation they have a hornlike appearance; were neither offerings nor receptacles for offerings, but rather resting places for the god, being shown sometimes occupied by him under



FIGURE 6.—"HORNS OF HONOR" ON ALTAR. (After Dussaud)

his fetish form, and sometimes awaiting his presence. Also, that which is usually considered an altar in representations is not strictly such, in the sense of being a table for sacrifice or offering, but really the throne of the god.

HORNS OF CONSECRATION SEATS OF HONOR.—If this be so, this hornlike object when devoted to secular purposes would be a seat, probably movable, probably of wood, and perhaps restricted

to the use of the nobility. It must be confessed that the examples found do not suggest great comfort, the largest being less than six inches deep, but it should be borne in mind that these stone and stucco examples are ritual copies of the ordinary object, and just as human figures and animals in similar cases are often little more than flat slabs, so these horns may give the outline in front elevation of an object which in reality had considerable depth. Where a seat two feet wide by two feet deep would be necessary for a human being, one a foot wide by three inches deep would be ample to hold a sacred axe.

As an attempt at reconstruction, I should imagine these seats to be primitively cubical blocks of wood hollowed out to fit the figure, like the stone seats found in the palace at Cnossus.² Later they may have been upholstered, as is suggested by an extra line on the inner curves of an example of horns painted on a filler from

¹ *Mon. Ant.* XIX, 1908, pl. II.

² *B.S.A.* VII, pp. 33 ff., fig. 11.

Palaikastro,¹ or may have contained cushions. Even in the crude wooden form, however, they would be considerably more comfortable than a stone bench or floor. Another possibility is that the curve running from horn to horn represents a strip of cloth or leather swung, as in the classic cross-legged chairs, between two supports. In this case there would probably be a front piece of wood of the horn shape and a similar back piece. Between these two would run bars at top and bottom on each side and from top bar to top bar would hang the leather seat.²

SQUARE CAPPED COLUMNS.—Further support is given to the theory that the horns were seats by an analysis of some of the scenes in which they occur. On page 121 mention was made of a peculiar type of column tapering upward with a square cap somewhat resembling a buckle. This shaft and cap is represented on a seal impression from Cnossus with a boxer standing before it; on a steatite rhyton from Hagia Triada, with helmeted boxers fighting in superposed zones; on a fragment of a steatite vase from Cnossus with a procession of youths passing before a stepped wall (Fig. 7);³ and on the miniature frescoes from Cnossus (Candia Museum) with crowds of gaily dressed women on a terrace or broad flight of steps (Fig. 1). In no case does it occur in connection with any structure resembling a house. In two of the instances the shaft seems to continue above and below the cap, while with the ordinary order, superposed columns are unknown. The connection with the two scenes representing boxers indicates that it was a feature characteristic of the arena. This is borne out by the other two examples; the stepped wall in the one (Fig. 7) strongly suggesting the stepped seats of an amphitheatre, which in

¹ B.S.A. X, p. 214, fig. 5.

² A possible confirmation of this construction is given by the famous "throne of Minos" found at Cnossus (B.S.A. VI, pp. 37 ff.; Durm, *Baukunst der Griechen*², p. 55, fig. 33). This stone seat consists of two pieces, a large slab for the back, and in front a cubical block cut in evident imitation of a wooden chair. Between the legs in front appears a curious inverted arch, which can hardly be pure ornament. The top pieces on the two sides, joining the front and rear legs, are cut with a curved under surface unlike the other pieces of the chair frame, which are all rectangular in section. These curves are, almost exactly, continuations of the inverted arch shown in front, and the suggestion is very strong that we have here in stone the imitation of what, in the wooden prototype, was a flexible seat hung from side to side and supporting a large cushion.

³ Seal impression, B.S.A. IX, fig. 35. Rhyton, *Rend. Ac. Lincei*, XII, p. 17. Fragment of vase, B.S.A. IX, fig. 85.

the other (Fig. 1) are indicated in front view by long horizontal lines. There can be little doubt, then, that these shafts represent tall poles to support an awning over the spectators, and the buckle-like object is possibly a splice in the shaft, possibly an attachment for a light wooden gallery, but most probably simply the attachment of a horizontal beam to hold the shaft firm at its middle

height. On the fragment showing the procession the buckle is evidently the lashing by which the bottom of the shaft is held to the stone work of the wall.

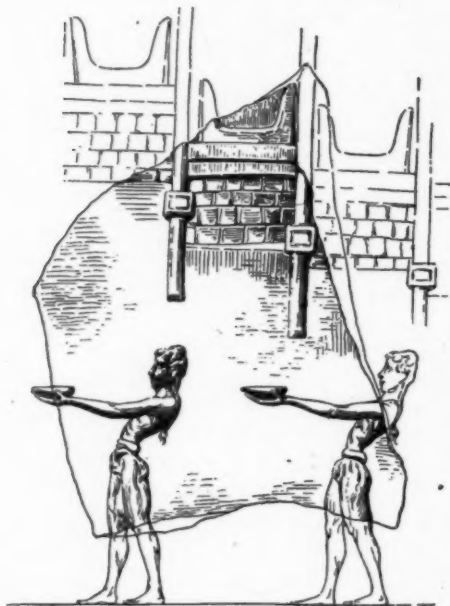


FIGURE 7.—STEATITE FRAGMENT FROM CNOSSUS.
(*B.S.A.* IX, Fig. 85)

Now on this fragment (Fig. 7) the horns are distinctly shown on the only step of the wall which is complete. The publishers have suggested quite logically that they were on all the steps. But why should a sacred emblem be set on every tier in an amphitheatre, and what more natural than that an object so

placed should be a seat? It is true that the horns are turned at right angles to the steps, but the steps are also turned at right angles to the procession. The procession is undoubtedly in the arena, not passing outside it, and the artist has turned his steps sideways because he could indicate their character better that way than by showing them in front elevation. In the same way the horns are shown from the front, because their side view would be a meaningless rectangle. Naturally they would always be shown front face, just as the human head is always shown in profile.

The miniature fresco from Cnossus, as restored by M. Gilliéron (Fig. 1), shows likewise, then, not a religious ceremony, but the gay audience at some theatrical performance. In front, on the lowest tiers, are the townspeople, men and women sketchily indicated in brown and white. Higher up, on a level terrace, are the ladies of the court, gayly dressed and busily chatting. No men appear here. On a second bank of seats, perhaps built of wood above the terrace, are other crowds of indeterminate men and women. In the centre is a pavilion, similar no doubt to one which stood formerly on the great stone bastion in the corner of the "theatral area" at Cnossus, with seats for the nobles of the court inside and on the roof. This whole fresco inside the palace may be a very literal picture of what was often seen on fête days just outside. Of course the pavilion on the bastion *may* have been a shrine, but it is much more probable that it was a royal box for the king and his highest dignitaries. It is also much more probable that the horns on top and within the pavilion were the seats of nobles, than that they were set there to lure innumerable deities.

DIGNITARIES NOT REPRESENTED IN MINOAN ART.—But why is it that the king and nobles are not shown? If the horns are really seats, why are no humans ever shown seated in them? Because royalty is never shown in any way in Minoan art. Egyptian and Assyrian art is full of scenes from the lives of kings and their highest followers, but here such figures are strikingly absent. The only explanation is that, in accordance with not uncommon magical theory, to make an image of a man was to entrap his soul. While images in Egypt assured life after death, in Crete apparently they rendered one liable to supernatural control. And if nobles were the only ones allowed the luxury and honor of these wooden seats, it is natural that no picture of a seat should ever show an occupant. The seat implies the noble, as a similar seat implies a god; for the mortal at least, it was deemed safer to let the indication suffice.

HALF-ROSETTE ORNAMENT UNIFORM IN POSITION.—The half-rosette ornament, then, in Nos. VII and VIII decorates the front of a throne or bench, placed in the latter case under a pavilion, in the former upon the roof, and in all probability built up of alabaster slabs exactly similar to those of the famous "frieze" at Tiryns. We can safely conclude also that the other examples, II-VI, whose original locations are unknown, were actual bench

fronts in the case of the larger examples, and miniature ones in connection with miniature palaces or temples in the case of the smaller ones. In every instance, whether the "horns of consecration" be a human or divine adjunct, the half-rosette ornament marks a structure which in function and construction is exactly similar to the benches found at Phaestus (Fig. 4), and in other Minoan palaces,¹ which are evidently incapable, on account of their functions, construction, material, and location, of ever having developed into the Doric frieze.

CONCLUSIONS.—The general conclusions of this investigation so far are:—

1. That the Dorian invasion broke the tradition of Minoan architecture in Greece proper;² its characteristic forms developing logically in Cyprus, Asia Minor and Persia,—where the earlier culture was not destroyed by these northern barbarians,—into the Ionic and Persian orders.³

2. That even if this invasion did not destroy the traditions of architectural forms, as it certainly did of vase painting and decorative forms, there is nothing to be found in Minoan construction or decoration which could logically have given rise to the distinctive features of the Doric entablature.

3. That as this entablature cannot be considered Minoan in origin, it must have been brought into Greece by the Dorians from the north, or developed out of their particular genius to serve their particular ends after they had settled in the country. From the great antiquity indicated by the fixity of its forms, the former hypothesis seems the more probable.

DORIC FORMS COPIED FROM A PRIMITIVE CONSTRUCTION IN WOOD.
—There seems to be no way of knowing what the architecture of the Dorian tribes was like, prior to their descent into Greece.

¹ Maraghiannis, *Antiquités Crétoises*, I, pls. V, VII, and VIII.

² This refers primarily, of course, to elevational forms of architecture. As the invaders built many structures on the foundations of Mycenaean buildings which they had destroyed, it is quite possible that the plans of the earlier architecture affected the later Greek plans. The use of tie-beams to reinforce walls of unburned brick was also continued after the invasion, but this is a system of construction so natural and general in primitive civilizations that it is quite possible that the Dorians had been long familiar with it themselves.

³ A comparison of the proto-Ionic stelae from Cyprus in the Metropolitan Museum, New York (di Cesnola, *Cyprus*, p. 117) with the iris forms common in Minoan decoration (Evans, 'Prehistoric Tombs of Knossos,' *Archaeologia*, LIX, pl. CL, fig. 142a) leaves little question as to the origin of the Ionic capital.

But though it is therefore impossible to trace the Doric entablature down from its sources to its historic form, it may be quite possible to conjecture from the latter, what the earlier form must have been. Many attempts in this direction have been made, usually based on the assumption that the stone forms are copied from an earlier construction in wood. In favor of this assumption can be advanced the strong superficial resemblance to wooden forms, and the fact that in early stone examples the form and construction are quite contradictory; while the arguments opposed are chiefly, that it would be counter to Greek spirit to imitate a wooden form in stone, and that the wooden forms which have been suggested all present many illogicalities. But there are also very strong arguments in favor of the theory of wood construction from external evidence. These are: first, in historic times the Greeks made extensive use of wood and unburned brick, and such constructions would naturally antedate the use of stone. Second, Pausanias (V, 16, 1) mentions having seen a wooden column in the temple of Hera at Olympia, a building whose walls were undoubtedly made of unburned brick; this wooden column naturally implies a wooden rather than a stone entablature. Third, Euripides (*Bacchae* 1214) speaks of fastening a head by pegs to the triglyphs of a temple; this indicates that these members at least were of wood. Fourth, Vitruvius (IV, 2, 2) specifically states that the Doric entablature reproduces wooden forms.

In matters of Greek architecture Vitruvius' statements must be taken with some caution, for it is doubtful whether he ever had been to Greece, and the Romanized types with which he was familiar and whose proportions he details, differed considerably from the originals. But Vitruvius was well read in Greek architectural writings, which from his account must have been quite numerous, and his statements are probably based on these authorities. So, while in detail he is often inaccurate, his broad statement that the Doric frieze is derived from wooden forms has much weight, being undoubtedly inspired by similar statements on the part of Greek writers.

SUGGESTED RESTORATIONS OF PRIMITIVE WOODEN FORMS.—Not content with the simple fact of a wooden derivation Vitruvius goes on to explain in detail what the primitive wooden form was, and here his testimony is very questionable. It should be borne in mind that he had never seen the primitive wooden frieze

of the Greeks; and being well acquainted with the wooden entablature of Etruscan architecture, he probably fitted the unknown Greek forms to the known Etruscan mould. At any rate it is evident from the argumentative tone he uses that he did not follow his Greek authorities literally.¹ According to him the triglyphs represent the ends of ceiling joists or tie beams, which have been trimmed off and decorated with painted boards cut in triglyph form, the mutules representing the ends of the principal rafters.

On the face of it this derivation seems simple and probable enough and has been generally followed by writers on the forms

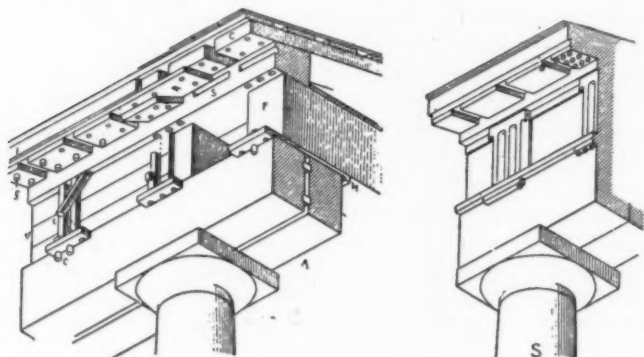


FIGURE 8.—ORIGIN OF THE DORIC ENTABLATURE: CHOISY

of classic architecture, such as Reynaud, Hittorff, and others, but investigation reveals several difficulties. Why should the *regulae* and *taenia* be interposed between a girder and the joists resting upon it? How account for the invariable six *guttae* below the *regulae* or the equally invariable three divisions on the triglyph? Is the band running across the top of the triglyph and the similar one across the top of the metope simply decorative? If so, why is that on the metope almost invariably slightly smaller than that on the triglyph, instead of being of the same size? If the mutules are rafter ends, why should their under surfaces always be studded with eighteen pegs? And why should the joists be of so very much greater size than the rafters?

¹ Vitruvius, IV, 2, 4.

Choisy¹ has attempted to solve several of these difficulties by assuming that the original rough construction of joists and rafters was covered by a revetment of small pieces of wood held on by pegs (Fig. 8). His solution, as always, is extremely ingenious, but seems far too complicated for a primitive people, and fails to explain many of the characteristic features of the frieze; *e.g.* the taenia, the cap band on triglyphs and metopes, etc. The discrepancy in the comparative size of the joists and rafters he explains on the assumption that the joists supported the rafters in mid span by posts and purlins, a construction made necessary by "la grande profondeur des portiques des temples primitifs."² But a construction in which there is one cross beam supporting the purlin for every two rafters is so extravagant as to be altogether improbable.³ Lastly, there is the difficulty raised by Viollet-le-duc⁴ that if the triglyphs represent beam ends, the ceiling within the portico should be on a level with the bottom of the triglyphs instead of being invariably on a level with the top.

This difficulty Choisy does not consider at all, but Guadet⁵ is "very much shocked" by it. "Why should one represent," he says, "the ends of beams, which do not exist, at a level lower than that of the ceiling? If the construction of the wooden entablature had comprised beams at the level later occupied by the triglyphs, we may be sure that the construction of the stone entablature would have preserved its beams at this same level, for nothing could have been easier. On the other hand, the stone ceilings set above the triglyphs must be the faithful reproduction of an earlier arrangement which also placed its wooden ceilings at this same higher level." But though this convinces him that the triglyphs cannot represent beam ends, it does not prove to him at all, as it does to Viollet-le-duc, that the primitive entablature was not of wood, and studying the question "en Architecte," he arrives at a new hypothesis.

In the first place, on the evidence of Euripides⁶ he assumes that the primitive wooden frieze crowned the wall of the cella rather than of a surrounding portico, for the suggestion that one might

¹ *Histoire de l'Architecture*, I, pp. 287 ff.

² *Op. cit.* I, p. 280.

³ Choisy's restoration of the Arsenal of Piraeus (*Études épigraphiques sur l'Architecture Grecque*, pl. II) shows five rafters for every cross beam.

⁴ *Entretiens sur l'Architecture*, I, p. 50.

⁵ *Elements et Théorie de l'Architecture*, I, pp. 342 ff.

⁶ *Iphigenia in Tauris*, 113 ff.

climb through the space between the triglyphs would be senseless unless this opening gave into the interior of the temple proper. From this he argues that the metopes were simply a series of



FIGURE 9.—ORIGIN OF THE DORIC ENTABLATURE: GUADET

windows around the top of the cella wall and the triglyphs short upright posts set between them (Fig. 9). Strong support is given to this assumption by Vitruvius' argument that the *triglyphs*

cannot have been, "as some say," windows.¹ It is probable that some Greek writer on architecture did state that the triglyphs were originally windows, meaning that the *band of triglyphs*, or frieze, was a band of windows. Vitruvius, reading him literally, found the statement incredible. So far as it goes, Guadet's hypothesis is extremely logical and clears up many of the difficulties in the other explanation. The position of the ceiling above the triglyph is explained, there is no longer the discrepancy in size between joists and rafters, the band across the top of the triglyph becomes a simple cap for this short post, and by considering the architrave as the top of a wall (obviously of unburned brick instead of stone as Guadet has it)² rather than as a wooden beam, the taenia becomes naturally a wooden plate to hold the superstructure, with the regulae, transverse pieces set into the wall to hold the taenia in place. The much greater projection of the cornice in the Doric than in the other orders may also be advanced in support of this theory, for such wide eaves are meaningless unless they shelter some sort of opening directly beneath.

There still remain, however, a number of points which Guadet's theory does not explain. That the wooden regulae should be pegged to the wooden taenia is natural, but the invariable six pegs, close together, would certainly tend to split the latter, and without some other justification would be much poorer construction than, say, three or four pegs only. It is natural enough that the triglyphs should be decorated on their faces, and also natural enough that this decoration should assume the form of vertical lines, as in the alabaster slabs of the benches at Phaestus, but the fixity of this decoration in form and number of parts points strongly to some origin more definite than pure ornament. The question of the band or cap along the top of the metopes is not considered by Guadet, who shows the metope spaces open. It is not unnatural that, when these spaces came to be filled with terra-cotta or stone slabs, the cap of the triglyphs should be carried as a decorative band across these slabs, but it is quite unnatural that it should be almost invariably at a slightly higher level. Moreover, Guadet's construction of the rafters and eaves is altogether unsatisfactory. He shows the mutules as the lower

¹ IV, 2, 4.

² Cf. Dörpfeld, 'Der antike Ziegelbau und sein Einfluss auf den dorischen Stil,' *Hist. u. phil. Aufsätze E. Curtius* . . . gewidmet.

faces of large beams which have a thickness equal to the height of the corona, decorated with eighteen absolutely meaningless peg holes; and he does not explain why the space between these rafter ends does not run up all the way to the sheathing boards laid above them, instead of being closed by a soffit which allows only the very bottom of the rafters to be seen. Lastly, the actual construction, which he shows, is almost as impossible in the scale of its pieces as the ceiling joist construction of the earlier hypothesis.

SCALE OF PRIMITIVE WOODEN FORMS.—To investigate this question of scale the following table of the actual dimensions of the parts of Doric entablatures has been prepared (Table I). The accuracy of these figures cannot be guaranteed to the centimeter, both because of slight variations in the original dimensions and because time has made measurements more or less conjectural in many cases. In the dimensions of width of triglyphs, metopes, and spacings of columns, averages have of course been taken, these always varying considerably in any building. It will be seen at once that there is a close similarity between the proportions of the same parts in the different temples, but to find out accurately what these proportions are it is necessary to divide the parts of each temple by some constant denominator. A brief inspection shows that the heights of the regulae, taenia, triglyph cap, space between triglyph cap and mutule, and the thickness of the mutule are all nearly the same in any given example, while the height of the triglyph minus its cap is approximately ten times the height of any one of these parts. The sum of all these heights, that is, the total height from the bottom of the regula to the top of the mutule, has therefore in each case been divided by fifteen,¹ so as to provide us with a unit of height to which these parts may easily be compared.² This unit (Table II, first column) is largest in the early Sicilian examples, ranging from 13 to 15 cm.; one temple, the Olympieum at Girgenti, seems to have a unit of just double size, and one, that of Aphaia at Aegina, a unit of half size. After the middle of the fifth century the unit

¹ In those cases where dimensions are missing, the total has been divided by an appropriate number, less than 15. These totals are numbered with a * in Table I, and these units are followed by a ? in Table II.

² In the Hecatompedon at Athens the heights of regula, triglyph cap, metope cap, and space between triglyph cap and mutule are twice the height of the taenia; in this case the sum has, therefore, been divided by 18.

steadily decreases in size till by the middle of the fourth century it has shrunk to 5 cm. It will be noticed, however, that the Sicilian examples are still generally somewhat larger than their Grecian contemporaries, and that one, the temple "G" at Selinunte, is built at double the scale prevailing at its period.

In the "height" columns of Table II are given the results of dividing the actual sizes of the particular parts by the unit of height for each temple; the italic figures give in centimeters the amount by which the actual size exceeds or falls short of the quotient given. Considering the necessarily approximate character of these calculations, these italic numbers may be safely regarded only as showing plus or minus tendencies. It will be seen at once that these proportions are remarkably constant throughout the series, though in several cases there is a slight developmental change in the course of the two centuries considered. Thus, for the first of these centuries the height of the regula is almost exactly 1, in the course of the second it diminishes to a little less than 1. These changes can be tabulated as follows:

Height of regula 1, changing to 1—.

Height of taenia 1, no change.

Height of triglyph $9\frac{1}{2}$ —, changing to 10.

Height of triglyph cap, $1\frac{1}{4}$, changing to $1\frac{3}{4}$.

Height of metope cap $1\frac{1}{4}$, no change.

Height of space between triglyph cap and mutules 1, changing to $1\frac{1}{2}$.

Height of mutule 1, changing to $\frac{1}{2}$ —.

The same system has been applied to the horizontal dimensions, the width of the epistyle being added to the distance of the columns from centre to centre (twice the sum of the widths of triglyph and metope) and divided by forty. This gives a unit of width (Table II, last column) which very closely approximates our unit of height, though in most cases it is slightly larger. The proportions and developments are approximately:

Width of triglyph 7, changing to $5\frac{1}{2}$.

Width of metope 8, changing to $8\frac{1}{2}$.

Distance of columns on centres 30, changing to 28.

Width of architrave 10, changing to $11\frac{1}{2}$.

Considering the remarkable fixity of these proportions during these two centuries of intense architectural progress, it is per-

TABLE I.

Date	Temple	Authority	Height of Regula	Height of Taenia	Height of Triglyph	Height of Triglyph cap	Height of Metope cap	Space between Ty. cap and Metope	Height of Metope	Total from bottom of Reg. to top of Metope	Width of Triglyph	Width of Metope	Distance on Column	Width of Architectural	Space of Column + entablature
Early VI c.	Corinth, Apollo	A. J. A. IX., 1905, p. 44 seq.	.115	.113	1.13	.240	.220	.235	.150	2.091	c. .78	1.17	c. 3.60	1.65	5.25
Early VI c.	Athens, Heaatompedon	Wiegand, <i>Die Perseerarchitektur</i>	.200	.136	1.30	.160	.160	.127	.165	2.042	c. .785	c. 1.085	c. 3.74	1.05	4.79
c. 581	Selinunte, "C"	Koldevey and Puchstein	.130	.170	1.30	.160	.160	.127	.165	2.042	c. .92	c. 1.04	c. 3.84	1.28	5.18
c. 570	Selinunte, "D"	K. and P.	.101	.105	1.30	.185	.180	.100	.115	2.069	1.05	1.20	c. 4.50	1.12	5.62
c. 554	Selinunte, "F" or "S"	K. and P.	.115	.085	1.30	.190	.165	.185	.095	1.970	1.03	1.26	c. 4.58	1.33	5.91
c. 550	Athens, "Pnyxianus"	Wiegand, <i>Die Perseerarchitektur</i>	.113	.128	1.152	.180	.167	.180	.093	1.872	c. .785	c. 1.18	3.92		
c. 510	Girgenti, Heraclaea	K. and P.	.170	.160	c. .220	c. .220	c. .130	.100	.100	*.780	c. 1.07	c. 1.23	4.61	1.07	6.28
500-470	Aegina, Aphaia	Furtwängler, <i>Aegina</i>	.062	.052	.710	.11	.083	.050	.06	1.0343	.310	.80	2.60	1.16	3.76
—480	Selinunte, "A"	K. and P.	.130	.180	1.50	.125	.115	.105	.070	*.300	.630	.845	2.96	1.125	4.68
—480	Selinunte, "E" or "R"	K. and P.	.205	.275	2.64	.220	.220	.180	.100	2.310	.950	1.41	c. 4.70	1.85	6.55
c. 485-473	Girgenti, Olympieum	K. and P.	.100	.080	1.06	.100	.100	.100	.117	4.090	1.79	2.28	c. 8.20		
c. 485-473	Girgenti, Hera	K. and P.	.110	.080	1.06	.100	.100	.100	.117	*.140	.615	.92	c. 3.08	1.205	4.725
—450	Olympia, Zeus	Curtius and Adler	.150	.150	1.525	.215	.180	.160	.130	2.320	1.06	1.540	5.22	1.125	5.545
447-438	Athens, Parthenon	Stuart and Revett	.078	.111	1.15	.156	.15	.172	.065	1.752	.928	1.284	4.22	1.764	5.964
c. 440	Pastum, Poseidon	K. and P.	.087	.17	1.267	.187	.227	.167	.087	1.81	c. .90	1.30	c. 4.38	1.43	5.81
	Selinunte, "G" or "T"	K. and P.	.200	.290	2.02	.290	.275	.220	.240	3.270	1.34	1.96	c. 6.60	2.27	8.87
437-432	Athens, Propylaea	S. and R.	.064	.087	1.006	.120	.070			*.137	.70	1.106	3.42	1.245	4.765
430	Bassae, Apollo	Blount, <i>le Meris</i>	.030	.085	.715	.130	.10	.056	.040	1.065	.832	.810	2.71	1.007	5.717
430-420	Sagasta	K. and P.	.133	.162	1.428	.193	.174	.160	.109	2.187	.850	1.32	c. 4.35	1.74	6.69
430-420	Girgenti, Concord	K. and P.	.0990	.121	1.145	.150	.150	.160	.067	1.732	.940	.900	c. 3.20	1.28	4.48
421	Athens, "Theom"	S. and R.	.0653	.075	.608	.115	.088	.095	.0589	1.1100	.607	.761	2.59	.9720	5.5689
	Rhamnus, Nemesis	Uned. <i>Ant. Africa</i>	.055	.057	.496	.070	.087	.066	.038	.782	.373	.516	1.872	.9720	8.4449
c. 390	Rhamnus, Zeus	Blount	.059	.094	.993	.147	.110	.150	.056	1.499	.733	1.137	c. 3.74		
c. 390	Olympia, Metron	Curtius and Adler	.041	.059	c. .510	c. .090	c. .071	c. .077	c. .025	.802	.403	.585	2.01	.510	8.390
c. 350	Epidaurus, Asclepium	Cavallius, <i>Epidaurus</i>	c. .010	c. .073	.487	.105	.090	c. .080	c. .040	.525	.440	.688	c. 2.27		

TABLE II.

Date	Temple	Unit of Height	Height of Regula	Height of Taenia	Height of Triglyph	Height of Triglyph cap	Height of Metope cap	Space between Triglyph cap and Metule	Height of Metule	Width of Triglyph	Width of Metope	Distance of Columns on Center	Width of Architrave	Unit of Width
Early VI c.	Corinth, Apollo	.127	1 1/2	1 + .01	9 1/2	2	2 - .02	2	1 + .03	6	9 - .01	27 1/2	12 1/2 + .01	.131
Early VII c.	Athens, Heatonpedon	.12 -	1 - .01	1 + .03	9 1/2	1 + .02	1 + .02	1 - .01	1 + .02	6 1/2	9	31	9 - .03	.12
c. 581	Selinunte, "C"	.14 -	1 - .01	1 + .03	9 1/2	1 + .02	1 + .02	1 - .01	1 + .02	7 + .02	8 + .02	30	10	.128
c. 570	Selinunte, "D"	.14	1 + .01	1 + .03	9 1/2	1 + .02	1 + .02	1 - .01	1 + .02	7 1/2	8 1/2	32 + .02	8	.14
c. 564	Selinunte, "P" or "G"	.13	1 - .02	1 + .01	10	1 1/2 - .02	1 1/2 - .03	1 1/2 - .02	1	7	8 1/2	31 - .01	9	.148
c. 550	Athens, "Pneustates"	.13 -	1	1 + .02	10 - .02	1 1/2	1 1/2	1 1/2	1	6	9 + .01	30	10 1/2	.137
c. 510	Gigenti, Heracles	.15 + ?	1 + .02	1 + .01	10	1 1/2	1 1/2	1 - .02	1 + .01	7 - .03	8 - .02	29 1/2 - .02	10 1/2 + .03	.157
500-470	Argos, Abiaia	.07	1 - .02	1 - .02	10 + .01	1 1/2	1 + .02	1	1 - .01	5 1/2	8 1/2	28 - .03	12 1/2	.094
-480	Selinunte, "A"	.10?	1 - .02	1 + .03	10	1 1/2	1 + .02	1	1	6 1/2	8 1/2	28	11	.102
-480	Selinunte, "E" or "R"	.15 +	1 - .02	1 + .03	10	1 1/2	1 + .02	1 + .03	1	6 - .01	8 1/2	29 - .06	11 + .03	.104
c. 488-472	Gigenti, Olympieum	.27 +	1 - .01	1 - .02	10 1/2 + .01	1 1/2	1 1/2 - .01	1 1/2 - .03	1 + .03	6 1/2	8 + .04	29 - .02	12	.287
c. 488-472	Gigenti, Hera	.10 + ?	1	1 - .02	10 1/2 + .01	1	1	1 1/2 - .03	1	6 1/2	8 1/2	28 1/2	12 - .01	.109
-450	Olympia, Zeus	.15 +	1	1	10 + .02	1 1/2	1 + .01	1	1 + .02	6 1/2	8 1/2	33 - .02	7 + .01	.159
447-438	Athens, Perikleon	.12 -	1	1 - .01	9 1/2 + .01	1 1/2	1 1/2	1 1/2 - .01	1	6 1/2	8 1/2	33 - .02	12 - .04	.15
c. 440	Pacton, Posidon	.13 -	1	1 1/2 + .01	9 1/2	1 1/2	1 1/2 + .01	1 + .03	1 + .01	6 + .03	9	30 + .03	10 - .02	.145
	Selinunte, "G" or "T"	.22 -	1 + .02	1 1/2 - .04	9 1/2 - .04	1 1/2 - .04	1 1/2 - .04	1 + .01	1 + .02	6 + .01	9 - .02	29 1/2	10 1/2	.222
437-432	Athens, Propylea	.10 + ?	1 + .01	1 - .02	10	1 + .02	1	1 - .01	1	6 - .01	9 + .03	29 - .03	11 + .04	.119
430	Besae, Apollo	.07	1	1 + .01	10 + .01	2 - .01	1 1/2 - .01	1 - .01	1	5 1/2	8 1/2 + .02	29 + .01	11 - .01	.0929
430-420	Segesta, Apollo	.14 +	1 - .01	1 + .02	10 + .02	1 1/2 - .02	1 1/2	1 + .02	1	5 1/2	8 1/2 - .01	29 1/2 - .01	11 1/2 - .01	.103
420-420	Gigenti, Concord	.11 +	1 - .01	1 + .01	10 - .01	1 1/2 - .01	1 1/2 - .01	1 1/2	1	5 1/2	8 1/2 + .01	29 1/2 + .01	11 1/2	.112
421	Athens, "Thaenon"	.07 +	1	1	10 - .01	1 1/2	1 + .01	1 1/2	1	5 1/2	8 1/2	29 + .01	11 - .01	.089
c. 390	Rhamnus, Nemesis	.05	1	1	10 - .01	1 1/2	1	1 1/2	1	5 1/2	8 1/2	29 + .01	11 - .01	.071
c. 390	Nemea, Zeus	.10	1 + .01	1 - .01	10 - .01	1 1/2	1 + .01	1 1/2	1	5 1/2	7 1/2	29 1/2 + .01	13 1/2	.089
c. 390	Olympia, Metron	.05 +	1	1	10 + .01	1 1/2	1 1/2	1 1/2	1	5 1/2	7 1/2	29 1/2 + .01	13 1/2	.071
c. 350	Epidauros, Asclepium	.05 +	1 - .01	1 1/2	10	2	2 - .01	1 1/2	1 1/2	6 1/2 + .01	9 1/2	32 - .01	8	.063

fectly safe to assume that the changes during the preceding, more conservative centuries were even less, and therefore, given enough data to determine the unit of any earlier temple, the actual sizes of the various parts can undoubtedly be guessed to within a few centimeters. Thus the Olympieum at Syracuse has columns spaced on centres about 3.70 m. apart, giving a unit of width of about 0.12—m.; the temple of Apollo at Ortygia has a column space of about 3.30 m., giving a width unit of 0.11 m.; and the temple of Hera at Olympia also an average column space of 3.30 m., giving a width unit of 0.11 m. This unit is substantiated in the last example by the diameters of the neckings of the capitals, which, though varying markedly, could not have carried an architrave less than one meter wide and more probably carried one of 1.10 m. Now this temple of Hera at Olympia is known to have been built of unburned brick with a wooden entablature, so here we can definitely find the size of the parts of one of these primitive wood constructions. The unit of width 0.11 m. gives triglyphs 0.77 m. wide. The unit of height could not well be less than 0.10 m. and this gives as the height of the triglyphs something between 0.90 and 1.00 m.

Obviously these triglyphs could not possibly have been beam ends, for beams 0.77×0.90 m. set 1.50 m. on centres are preposterous.¹ Also, it is evident that Guadet's restoration is impossible as it stands, for his triglyphs would be posts 0.77 m. square in horizontal section; the mutules, rafters 0.77 m. wide set .75 m. on centres; and the lintel above the triglyphs, and the regulae, timbers also .77 m. wide; all of which would have had to be sawn or hewn out of trees nearly a meter in diameter.

COMPOSITE MEMBERS.—The question at once arises whether these members instead of being single huge timbers might not have been composed of a number of smaller pieces, in the same way that the Persian architrave was composed of superposed beams. The minute that the Doric entablature is regarded in this light all its difficulties disappear, and the restoration of its primitive form becomes simple.

¹ The rafters in the temple of Poseidon at Paestum measured 0.22 m. square and the great ridge beams and purlins 0.72—0.61 m. The largest beams in the arsenal at the Piræus were 0.75 m. square. The socket of a beam in the Royal Villa at Knossos measures 0.60×0.80 m. (*B.S.A.* IX, p. 151) but this, like those in the Piræus, was a girder beam, the common joists were round and only 0.44 m. in diameter.

It should be borne in mind to begin with that, until the invention of the circular saw, planks were a luxury. Primitively wood is rough hewn to approximately square timbers, and is split and dressed with an adze to form planks only where absolutely necessary. Even during the Middle Ages wooden wainscoting was only for the richest; not because of the scarcity of wood, but because of the difficulty of working it into thin sheets. Mediaeval floor joists and the timbers of the elaborate mediaeval roof trusses are always nearly square in section, though of very varying sizes. It can be seen, then, that though the early Greeks and the Cretans before them possessed saws, there was small likelihood that logs 0.80 m. in diameter would be worked into boards 0.10 m. thick, if any other method of construction were possible. A rational form of construction for a primitive people could include only timbers in their natural round form or roughly squared, and, wherever possible, of moderate cross section. This principle is perfectly adhered to by Minoan construction, and we may be sure the early Greeks did not depart from it.

BRICK.—The other element that enters into this primitive Doric construction is unburned brick. Vitruvius (II, 3, 3) states that the Greeks used bricks four palms square for domestic work and five palms square for public work, and with these, half bricks, *i.e.* four by two palms, or five by two and one-half in area. He does not state the thickness of these bricks, but this has generally been assumed to be one palm. A palm in Athens according to the Solonian foot of 0.296 m. would be 0.074 m.; according to the earlier Aeginetan or Pheidonian foot of 0.328 m. it would be 0.082 m.;¹ what it was in other states and colonies is not definitely known, but the standards certainly varied through a range of several centimeters. As a matter of fact the examples of brick so far found usually indicate a larger standard. Those from the fortifications of Eleusis measure on the average $0.10 \times 0.45 \times 0.45$ m., and there is mention of one at the same place measuring 0.492 m.² Minoan bricks found at Gournia measure $0.08 \times 0.24 \times 0.35$ m. and $0.09 \times 0.37 \times 0.48$ m.,³ some at Cnossus measure 0.12×0.45 m.,⁴ and those at Troy are in general 0.10

¹ Dörpfeld, *Ath. Mitt.* VII, 1882, pp. 277 ff.; XV, 1890, pp. 167 ff.

² Caskey, *A.J.A.* XIV, 1910, p. 303.

³ Durm, *Baukunst der Griechen*³, p. 37, fig. 19.

⁴ *B.S.A.* XI, p. 5.

to 0.15 m. thick and up to 0.65 m. wide.¹ Very late Greek examples from the Exedra of Herodes Atticus at Olympia measure 0.05 to 0.065 m. by 0.12 to 0.165 m. by 0.26 to 0.39 m.² These last are evidently what Vitruvius calls half-bricks. The thickness of the bricks then (and probably the local palm which served as its standard) varied from 0.15 m. in pre-Hellenic examples to 0.05 m. in Hellenistic times. The superficial dimensions seem to be usually a little greater than an even multiple of the thickness. This is altogether natural, for in general practice the surface dimensions of bricks are multiples of the thickness and the width of a joint combined. The joints in Troy ranged from .01–.03 m. and were probably somewhat smaller in later Greece. Thus the width of the bricks at Eleusis should naturally be $4 \times (0.10 + .01 \text{ m.})$ or 0.44 m., which is approximately their real size.³

It will be noticed that the dimensions of the unit in Table II fall within the range of these brick sizes. This is not pure chance, but rather confirms the correctness of the analysis so far, for if the regulae were wooden members set crosswise into the top of a brick wall, they would naturally be of the same thickness as one course of bricks, or a little less to allow for roughness in their execution. It is also natural that the width of the architrave should be an even multiple of whole and half bricks, and these in turn two or four times a unit of width slightly greater than the height of a brick. The half-bricks are evidently necessary to prevent the joints of one brick course coming directly over those of the row below, being placed in alternate courses on the inside and outside of the wall.⁴ The wall would be either one and a half,

¹ Durm, *Zum Kampf um Troja*, Berlin 1890.

² Curtius und Adler, *Olympia*, Text, II, p. 135.

³ Too few examples of bricks have been found to state definitely that all bricks were four times as wide as high, but awkwardness of shape makes improbable bricks five times as wide as high, which have been assumed from Vitruvius' statement. Vitruvius does not state proportions but only actual dimensions, and the bricks which he gives as five palms wide were probably not, as has been assumed, one palm, but one and a quarter palms high. Thus the bricks from Eleusis would be a little over five Aeginetan palms wide, but still only four times as wide as high. Such measurements for monumental bricks may be survivals of a still earlier, larger unit. It is not impossible that the palm in Sicily varied from 0.14 m. in early times to 0.10 m. in the fifth century, and in Greece from 0.12 m. in the sixth century to 0.05 m. in the fourth century.

⁴ Vitruvius, II, 3, 4.

two and a half, or three and a half bricks thick. Two and a half is the most reasonable size for buildings as large as the temples, and two and a half bricks give exactly the ten units of width characteristic of early architraves.

Assuming a unit height of 0.10 m. and a width of 0.40m. for a brick, and bearing in mind the principles that the timbers should be nearly square and that brick should be used wherever possible, the entablature builds itself up as follows (PLATE VII).

RECONSTRUCTION.—First, a brick wall two and a half bricks (10 units) thick is built. In the top course cross pieces one brick high are laid. These cross pieces total a little less than 7 units in width and being made of square timbers evidently consist of six pieces 0.10×0.10 m. laid side by side, the irregularities of the hewing and the five joints taking up the extra 0.10 m. Between every two sets of cross pieces two bricks are laid, making the interval 0.8 units wide. On these are laid longitudinal timbers to protect the top corners of the wall. These may extend all the way through the thickness of the wall or may be only along the inner and outer face. If these timbers are one unit square and four be laid along each edge, a single brick will fill the space between, if three be laid along each edge a brick and a half brick will fill the space, and with two timbers two bricks could be used. The last is the most economical arrangement. Now short piers are to be erected above the transverse members, leaving openings two bricks wide between them. The appearance of the triglyph at once suggests a pier composed of nine vertical shafts each two units thick, which, in order to waste the least possible wood, are trimmed as octagons instead of squares. A brick pier would be more economical than this wooden pier but for reasons to be considered later would present too friable a face. As a compromise, however, three of these octagonal timbers may be placed in front and backed with a brick pier, one and a half bricks wide; such an arrangement would account for Vitruvius' statement (IV, 2, 2) that the *faces* of the triglyphs were separate pieces of wood painted with blue wax. This brick pier did not run through the thickness of the wall, since no trace of it is shown on the inside of the stone friezes. The latter evidently represent a form in which the openings have been blocked up, showing decorated panels on the outside (the metopes), and on the inside a continuous brick wall carried past triglyphs and metopes. If the brick pier behind the three triglyph timbers were one and a

half bricks deep, the inner wall of the frieze could only have been one-half brick, while if the pier were one brick deep, the wall could also be one brick thick (PLATE VII, 3). Moreover, a brick pier one and one-half bricks square would require quarter-bricks for the corners, therefore one and a half by one seems the most probable size for these piers.

Through each of the six transverse timbers below, a peg is driven up into the three octagonal posts. This makes two pegs to each of the posts, sufficient to anchor them securely at the bottom, at the same time holding the longitudinal timbers in place. If the three posts instead of being backed by a brick pier were backed by other posts, it is difficult to see how these other posts could be secured at the bottom. It would be possible to face the brick piers with posts on the inner as well as on the outer side, but apart from the fact that no triglyphs show on the inside of stone entablatures, there are no guttae, representing pegs, to be seen on this face. In many cases the inner edge of the wall on which the piers stand is finished with a moulding instead of a square taenia. This evidently indicates a terra-cotta cap as shown in PLATE VII, 3.

From post to post a lintel is placed consisting of five timbers, each one unit square. To fasten these in place by pegging them to the triglyph post would weaken them unduly, moreover the inner ones could not be pegged to the brick piers, therefore they are mortised into six other timbers of slightly greater depth (to allow for cutting away the mortise), which run transversely across the top of each pier, forming the triglyph caps. This accounts for the difference in depth between the triglyph and metope caps shown in the stone friezes. It is quite possible that pegs were driven down through these cap pieces into the three octagonal posts, but these pegs would of course be hidden by the lintel beams.

In pre-Hellenic and Lycian roof construction, the roof and ceiling would be one and the same, and would consist of round or square beams laid horizontally close together, and covered with a thick layer of clay. The beam ends of this roof would show from the front as a band of roundels or dentils. In some Italo-Doric examples which show Asiatic influence,¹ there is such a band of dentils exactly in this place. The roof construction of the Dor-

¹ For example, the Corintho-Doric temple at Paestum, Koldewey and Fuchstein, *op. cit.* I, pl. 31. Cf. Kas'r Fir'aun, Petra, Brünnow and von Domaszewski, *Provinz Arabia*, I, fig. 200, and the Theatre of Marcellus at Rome.

ians, however, is radically different; it is not level but has a slight slope, and as far back as we have any evidence, is always covered with baked tiles. These differences evidently point to a climate where rain was more frequent than in Crete and where possibly snow was not unknown. Since the climate of Greece did not change to any great degree between the time of the Mycenaean and early Greek civilizations, it seems probable that the Dorians brought their roof construction with them from the north, tiles and all. The Doric temples known to us seem regularly to have had a horizontal ceiling below the sloping roof. It is hard to say why this should be, except for purely decorative reasons. This ceiling, as is evident from the later stone examples, was not built simply of beams laid side by side, but was coffered. The space to be covered was spanned by beams at regular intervals, on which other pieces of wood were laid at right angles, and so on until the interspaces became progressively small enough to be closed with single flat clay or terra-cotta slabs. There can be little doubt that the roof itself was constructed in the same general manner as this ceiling, except that it must have had, above the coffers, a layer of clay and rushes to provide an even bed for the roof tiles. In case there were no separate horizontal ceiling, the roof beams would rest directly on the lintel above the triglyph piers, but where the ceiling existed its beams would rest upon the lintel first, occupying a height of one unit, and above these would come the roof beams. A ceiling beam would come over each pier, with possibly another one between each pair. These intermediate beams, however, seem improbable, judging from later stone ceilings. Moreover, the ceiling being so much lighter than the roof they are not here necessary.

To make an even bed for the roof beams a course of brick is laid on the lintel, filling out the spaces between the ceiling beams and serving to distribute the weight of the roof over all the five members of the lintel.

On this, timbers one unit square are laid parallel to the slope of the roof. These are grouped together to form flat beams. Over each vertical pier is a group of six occupying the full width of the pier. Between the piers is another group which is made of such width that the spaces between the groups of rafters can be easily spanned by a regulation brick four units wide. The intermediate group in earlier examples consisted apparently of three or four timbers, in later examples it was regularly made of six

timbers.¹ It is possible that a wooden sill mortised to hold the beams was placed on the bricks above the lintel, or actually replaced these bricks. It seems more in accord with the general principles of this primitive architecture to assume that the roof beams were laid in a deep bed of clay mortar directly upon the bricks, the spaces between the beams being filled either with brick or with short pieces of wood in front to hold the mortar behind. The slope of the roof is so slight that such a construction would give a very excellent bearing all across the lintel. The beams project beyond the face of the lintel, in some cases a distance of three units, in others six units² to form a broad eave to shelter the openings in the wall below.

There is no indication in the stone Doric architecture as to what the original construction of the roof above this point was, nor does it vitally concern our restoration. However, it seems to me probable that the earliest form consisted simply of bricks laid upon the groups of rafters, to span the spaces between them, and on these a sort of lath work, to carry the "wattle and daub" in which the roof tiles were laid (PLATE VII, 1). To anchor this construction and prevent the bricks from sliding off, transverse timbers were apparently laid upon the ends of the rafters and secured to them by pegs driven from below (the guttae in the mutules). In the early examples with an eave projection of three units there would be three such transverse timbers and in the later examples, with a projection of six units, six timbers; in this case, however, only every other one would be pegged, to avoid unduly weakening the rafters. Above these transverse timbers another larger one laid along the outer edge of the roof and held on by the same pegs driven through the rafters from below, would serve as a "ground" for the clay tile-bed and give a solid edge to the roof. Flat painted terra-cotta plates fastened to this timber covered the exposed edge of the roof, forming at the same time a highly decorative band. From below, this roof construction would show long shallow panels running from eave to ridge, similar to those in the roofs of many Etruscan tombs.

¹ Temple C at Selinunte with three beams to the intermediate rafters gives an interspace of 2 units; temple D, also with three beams, an interspace of $2\frac{1}{2}$ units. The Hecatompodon at Athens, with four beams, gives an interspace of $2\frac{1}{4}$ units, and the average, where six beams are used, is $1\frac{1}{2}$ units.

² This distance is not necessarily fixed; Temple F at Selinunte indicates a projection of four units with four transverse timbers above.

The great disadvantage of this construction would be that the weight would be borne very unequally by the rafter timbers, some of the bricks resting on but two timbers while others rest on four. The obvious remedy is to interpose transverse timbers between the bricks and rafters, to distribute the weight. Small blocks three units long set in between would serve to hold them in place (PLATE VII, 3-4). The general similarity to the construction clearly shown in the stone coffered ceilings emphasizes the probability of such an arrangement. The roof tiles which protect the whole, are flat with cover tiles over the joints, in no essential different from those of historic times.

FORMS WHICH ARE CHARACTERISTIC OF MATERIALS.—The structure thus built up is a thoroughly practicable piece of building, employing no piece of wood over two units (c. 0.20 m.) square, is quite in accord with Greek wood and brick technique so far as it is known, and agrees in every detail with the Doric entablature as translated into stone. Certain variations in these stone entablatures only tend to prove the correctness of this theoretical wooden form, being quite in keeping with its structure. Such, for example, are the variations in the details of the Hecatompedon at Athens, the regulae and lintels above the triglyphs being two units square each, for greater strength, two rows of bricks being placed above the lintel, and the transverse beams above the rafters being also two units square as shown by the presence of two instead of three rows of guttae under the mutules; the change from three rows of guttae to four in the mutules of temple F at Selinunte; and the corner triglyph on the pronaos of temple E, which shows three upright posts on one side and four on the other.¹ Such changes indicate a conscious copying of a perfectly comprehended construction.² On the other hand, Roman examples of Doric entablatures indicate a blind tradition, for in them occur such anomalies as corners occupied by metopes rather than by triglyphs, and mutules which have retreated into the soffit of the cornice, leaving only the guttae as decoration. It seems therefore altogether probable that the Greek architects

¹ Koldewey and Puchstein, *op. cit.* I, figs. 96 and 177.

² I am quite unable to account for the regulae with five guttae published by Wiegand, *Porosarchitektur der Akropolis zu Athen*. At Locri Epizephyrii mutules with five guttae have been found (*Not. Scav.*, 1911, Sppl., pp. 27 ff., fig. 26), but this is a very corrupt colonial example, and shows moreover five bars to the triglyphs. The combination of five guttae in the regulae with three barred triglyphs seems to me so freakish as to be almost incredible.

had actual examples of the wooden prototype under their eyes until quite a late period, in spite of the fact that no definite mention of such examples has come down to us. It seems also probable that the much discussed "module" of Doric architecture was not derived from the diameter of the column but from the size of the brick,—a much more rational proceeding.

Another interesting point is that whereas the taenia, regulae, and all the parts presumably copied from wood on brick show plane surfaces, the moulding at the top of the corona has a curvilinear profile which is altogether suitable to terra-cotta. This same difference is to be seen on the inner side of the entablature; here the taenia is often rectangular, but also often moulded, and the surface of the frieze, where a filling has covered triglyphs and metopes, is crowned with a beak moulding similar to that outside, evidently also indicating a revetment of terra-cotta. The top of the classic anta indicates a similar terra-cotta revetment fastened around the primitive wooden posts, the face of the revetment projecting beyond the face of the post. The Romans, it will be noticed, ignored these niceties derived from the difference in the original material of mouldings.

One last question, which in reality is the fundamental question of all, remains to be answered. Why should a primitive people ever evolve such an elaborate structure as this protodoric entablature seems to have been? The derivation from a row of windows can hardly be considered adequate, in spite of the presumed authority whom Vitruvius combats. For while the metopes would certainly make excellent windows, there could be no necessity for such a continuous row in so sunny a country as Greece; and isolated windows, rectangular holes in a brick wall, could have been built with no more complicated woodwork than a simple lintel across the top.

Fortunately there exists a written account of a secular structure which, though nowhere called a Doric frieze, bears such striking resemblance to this hypothetical brick and wood entablature that there can be little doubt as to the practical identity of the two. This is the contract drawn up for the restoration of the walls of Athens in 306 B.C.¹ These walls, repaired in the fourth

¹ The best transcription of this inscription is in *I.G.* II, 167. The most important discussions in regard to the restoration of the gallery are by K. O. Müller, *de Munimentis Athenarum*, Göttingen, 1836, Choisy, *Études épigraphiques sur l'architecture grecque*, pp. 43 ff., L. D. Caskey, *A.J.A.* XIV, 1910, pp. 298 ff.

century, were evidently of earlier date, being probably built about 479 B.C.¹ The restoration merely copied the earlier form of construction. Unfortunately for us, this rendered unnecessary to the contractor the description of many details. Though the inscription is much mutilated in parts, the section relating to the gallery along the walls is in a good state of preservation and includes the following directions:² "Wherever there is an injury measuring more than six dactyls he shall lay new bricks, leaving openings two bricks in width, making the height of the parapet three feet, that of the openings ten courses of bricks; and he shall lay wooden lintels extending through the width of the wall, fastening them with dowels, the lintels to be one course of brick in thickness and eight feet long, and he shall place below the lintels blocks and he shall lay six courses of brick. . . . And where there is no roof, he shall roof the gallery with rafters and planks,³ placing them crosswise, or else he shall mortise square timbers setting them three palms apart, *ἐκ τοῦ ἐπάνωθεν*.⁴ And having built up with brick upon the wall, he shall trim the front ends of the rafters so as to be vertical, making them project not less than one foot and a half from the wall, and he shall nail on a beam as a crowning member of the cornice, making it straight on top, its width to be seven dactyls, its thickness one palm; and he shall cut a rabbet in its inner face of the thickness of a sheathing plank, and its front he shall make according to the line. And within he shall nail on with iron nails sheathing planks three palms apart, one dactyl thick, five dactyls wide. And after laying upon the sheathing moistened rushes and under these beanstalks or rushes, he shall cover the whole with a layer of clay mixed with straw three dactyls in thickness. And he shall lay Laconian tiles over the whole gallery of the circuit wall, and shall put in place the tiles (*ἡγυμένους*) of the long walls wherever they are not in place, laying them all in clay with their faces vertical, and he shall lay the cover tiles all in clay. And he shall cover the front of the roof timbers with Corinthian cornices,

¹ Thucydides, I, 89 ff.

² Except for the omission of passages not relating to the part under consideration, Caskey's translation is followed exactly.

³ *Ἐπιβλήσων* does not mean specifically planks or thin boards, but simply timbers.

⁴ "Working from above." The probable meaning is that these transverse timbers were held apart by spacing blocks placed on top of the lower set of timbers.

trimming the joints so that they shall fit tightly, making them true vertically and horizontally. And having set up a scaffolding he shall put on a coating of clay mixed with straw to the height of four courses. . . . "

It will be noticed that some of the dimensions are given in feet and others in sizes of brick. Evidently the bricks were not, as Müller, Choisy, and Caskey have all assumed, one foot square and one palm high, but were probably larger, possibly $0.45 \times 0.45 \times 0.10$ m. as in the fortifications of Eleusis. The lintels, spanning two openings, are given as eight feet long and the openings as two bricks wide. The piers, then, between the openings must have been less than two bricks wide. The dimensions agree exactly with those of the triglyphs and metopes worked out hypothetically from the measurements of the temples;—piers one and one half bricks wide and ten bricks high with spaces two bricks wide between. On these is a lintel one brick high set upon and pegged into blocks (the triglyph caps). Above this lintel, according to the previous readings of the text, are six courses of brick. This arrangement seems highly improbable as it would serve no useful purpose and would rather seriously load the none too sturdy lintel. It seems more logical for the phrase relating to the six courses of brick to begin the following sentence referring to the piers along the inside of the wall¹, instead of ending the one referring to the lintels. In this case, the roof would rest directly upon the lintels, the position it would also occupy in the hypothetical Doric entablature in cases where there was no horizontal ceiling inside. The roof is of exactly the type of construction that stone reproductions have shown to be the original Doric form; flat beams laid cross-wise forming coffers²; a layer of bricks to close the coffers; then furring, reeds, and clay under the roof tiles. The beanstalks or rushes, which are laid under the furring strips (or sheathing planks), are simply to fill in the empty spaces necessarily found on the upper side of a coffered ceiling. Today cinder filling is used in much the same way to serve as a light

¹ This sentence has been omitted from the translation as having no immediate bearing on the frieze.

² The optional form of construction allowed the contractor is evidently a later manner of building. In the original walls the timbers were apparently laid on top of one another, in 306 B.C. mitring short timbers between those of the first set was apparently the common practice. Such construction would account for the mutules in later examples showing only one-half unit of thickness.

weight, space-occupying foundation for cement floors. It will be noticed that iron nails are particularly specified for nailing on the furring strips; this may be because these strips were nailed directly to the bricks, where pegs would be useless. In any case, the inference is that nails not so specified are not of iron. The crowning beam is therefore "nailed" on with wooden pegs driven from below, corresponding to the guttae in the Doric mutules. The projection of the eaves (a foot and a half) corresponds absolutely with the later Doric entablatures.¹

It is true that no mention is made of triglyphs, taenia, and regulae, though it is quite possible that these details were covered in the badly mutilated section of the inscription which immediately follows,² but it is certain that piers of unbaked brick, less than 0.70 m. wide, would quickly succumb to rocks hurled from without, unless protected by a heavy facing of wood. The three vertical posts of the triglyphs would furnish an almost ideal protection, identical in principle with the wooden antae which protect exposed wall ends in Minoan and Greek architecture, and the wooden facings used on brick walls by the Egyptians and Assyrians.³ There is no attempt here to prove an absolute

¹ At the end of the passage quoted there is reference to a frieze of clay plaster, four courses in height. Choisy considers that this was put on the outside and covered four of the six courses of brick which he assumes to be above the lintel. But why should only four of these courses be covered, and why specify that a scaffold be erected for such a simple bit of work? Caskey makes no attempt to clear up the difficulty. It seems to me that this band of clay can be considered as placed in antithesis to the band of Corinthian terra-cotta which in the preceding phrase is specified to cover the roof timbers on the outside. In this case it would probably be a vertical surface of clay supported by lathes (scaffolding) to fill the space, on the inner side, between the lintel and the under side of the roof beams. With the normal slope of Greek roofs, this space would be approximately four courses high. It would certainly have to be covered with something. In more monumental work a terra-cotta revetment would probably be used, as indicated in stone examples (PLATE VII, 2); in this instance terra-cotta is reserved for the more exposed exterior.

² Dr. L. D. Caskey has pointed out to me that the terms *θεῖαι* and *ἰσίδεσμοι*, which occur in another badly mutilated section of the inscription, refer to long longitudinal beams and transverse beams to hold them in place. These may, of course, have been used only in the main body of the wall, but as the edge of the parapet would stand in greater need of such reinforcement than any other portion, Dr. Caskey suggests that we have here a reference to the *taenia* and *regulae*.

³ Choisy *Hist. de l'Arch.* I, p. 25, fig. 10; p. 103, fig. 2. The faces of fortified towers at Nineveh are ornamented with a treatment evidently derived from a wood revetment,—square beams at the corners, perhaps of cedar, with a facing

identity between the walls of Athens and the Doric entablature; the evidence is much too fragmentary. The only claim is that the legible section of the building inscription includes many details that are identical with those of the wood and clay Doric forms as reconstructed from the stone replicas, and none that are contradictory, and hence it seems highly probable that the gallery of the walls of Athens presented almost exactly the same appearance as the rows of brick and timber framed openings which crowned the earliest Greek temples. The corollary inference is that these openings in the temples were not windows simply, but loop holes or *crenelations* for defence.

It is natural that the Dorians, who were essentially a military people, should have developed first a type of military architecture. It is also natural that the *megaron* of the king, the "keep" of the citadel, should be well crenelated around the summit of its walls. And when the *megaron* had ceased to be a fort and, becoming a temple, had changed, with its function, from brick and timber to stone, what more natural than that it should have preserved the image of its early type,¹ while the real fortifications, continuing not only the form but the function of the Doric entablature, served to check any departures from the old structural arrangements?

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of round beams, perhaps of palm, between. The substitution of burned brick for the earlier unburned brick made this revetment unnecessary, but its form was preserved. See V. Place, *Nineve et l'Assyrie*, II, p. 50; III, pls. 21, 26, 33.

¹ English churches in the Middle Ages were similarly crowned with wholly useless battlements.

A VASE FRAGMENT IN THE STYLE OF OLTOS USED IN
RESTORING A CYLIX WITH A REMINISCENCE
OF A SATYR PLAY

IN THE very interesting little collection of Greek vases purchased by a few members of the Baltimore Archaeological Society in 1887, and now at the Johns Hopkins University, are several red-figured cylices, most of which have been published by Hartwig in *Die Griechischen Meisterschalen*. In this collection is an unpublished cylix.¹ It represents in the interior within a maeander border (where in three or four cases the lines of the maeander are connected) a satyr to left with a panther's skin held behind his back by his left hand, which is raised behind his neck, while his right is stretched out straight in front of him. The wrist and hand are modern, as is a piece of the vase from here to the edge; but in the drawing (Fig. 1) they are restored as they were repainted (Fig. 4), though the hand may have been raised. The bald-headed satyr with curly hair at the back of his head, with mustache and long curly beard, with animal ears and curving tail, is dancing with his right knee raised so high that there is room for a drinking horn or *képas* under his right foot. The raising of one foot in the dance is a frequent pose on vases even from early times.² This attitude, as well as that of one hand outstretched, occurs often on vases representing scenes from the satyr chorus.³ Undoubtedly this was a stock gesture in such dances in and outside of the theatre. It is also interesting to note that one claw of the panther's skin tied about the neck shows

¹ Diameter 0.25 m.; interior scene, including maeander border, 0.145 m. in diameter; exterior scene 0.09 m. high. I am indebted to Miss M. Louise Baker of Philadelphia for the drawings reproduced in this article.

² Cf. for example a Fikellura vase in Buschor, *Griechische Vasenmalerei*, p. 82; a Boeotian cantharus, *ibid.* p. 127.

³ Cf. Baumeister, *Denkmäler*, pl. V; Reinach, *Répertoire des Vases Peints*, II, p. 202; *Jb. Arch. I.* XXV, 1910, *Beiblatt* to pl. IV; Furtwängler-Reichhold, *Gr. Vasenmalerei*, pl. 48, in which, however, the hand is not extended, etc.

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the pad of the foot, that the lines of the deltoid muscle of the right shoulder, some of the abdominal muscles, the muscles of the right leg, and the line on the right foot can still be seen; but the work is hasty, rough, and sketchy, though fairly vigorous. The



FIGURE 1—CYLIX IN BALTIMORE: INTERIOR

feet, moreover, are different from those on signed vases of Oltos, and the style is not nearly so refined.

On the exterior under each handle, the inside of which, as well as part of the vase between the handles, is left in the color of the clay, is an ivy leaf which at first sight one might interpret as a trade-mark, especially as it occurs on a kylix in somewhat similar style in the Metropolitan Museum (Fig. 2)¹ with scenes of satyrs

¹ This kylix is published from photographs kindly furnished for this purpose by the authorities of the museum.

and maenads and on a cylix in something like the same style, which I noticed in the Thorvaldsen collection in Copenhagen. Perhaps several other cylices could be found in the same style with the same sort of leaf, but this is too common a motif from which to draw arguments. The leaf occurs even on black-figured vases;¹ and while it is rare in severe red-figured ware (Hartwig cites only two cases), it is very frequent on vases of about the middle of the fifth century.² So while some of the severe red-figured vases with the ivy leaf are undoubtedly in the same style, we cannot use this as a criterion and create a "Meister mit dem Epheu-Blatt" to correspond to the "Meister mit der Ranke," about whom I am also somewhat skeptical; and such terminology is a little misleading.

On either side of the exterior are three figures, a symmetrical arrangement which often occurs. On side A (Fig. 3) a satyr is stealing up from the right on a maenad who is reclining in a half-seated posture, with her legs bent back,³ against a rock such as occurs on the Duris cylix in the British Museum representing the exploits of Theseus, though there the projecting portion is on



FIGURE 2.—CYLIX IN THE METROPOLITAN MUSEUM: a. INTERIOR: b. EXTERIOR

¹ Cf. for example Furtwängler, *Die Beschreibung der Vasensammlung in Berlin*, Nos. 2063, 2064.

² Cf. Hartwig, *Die Griechischen Meisterschalen*, p. 651, n. 2, and pl. XXXVIII.

³ The problem of drawing Actaeon with his legs bent back in Furtwängler-Reichhold, *Gr. Vasenmalerei*, pl. 115, was somewhat similar.



FIGURE 3.—CYLIX IN BALTIMORE: EXTERIOR, SIDE A, AFTER CLEANING

the right and not the left of the rock.¹ The maenad is clad in the fine-lined Ionic chiton with overfold and sleeves and wears over her head a hood like that on the famous Hegeso grave-monument and on many vases. A few locks appear below the hood on the back of the neck and there are three wavy lines of hair over the forehead. A thyrsus extends over her left shoulder from her lap and the tufted round end is seen above on the rock. She has a pleasant profile but the delicacy seen in the fragment from the other side of the vase (Fig. 6) is lacking. She has her left hand on her left knee and is looking toward and pointing with the first finger of her right hand at the ithyphallic young satyr (who is not bald-headed as the others are), who is hurrying toward her and bending forward with right foot advanced and body thrown well forward with both hands stretched out, the right held up with thumb separated from the fingers, a characteristic gesture on such satyr vases. A *κῆρας* fills the space above between the two. Behind the maenad to the left is a bald-headed satyr most of whose head is restored, standing with his left leg outstretched and his right bent, holding his phallus with his right hand (in the actual drama a loin-cloth with tail and phallus attached were generally worn) and extending his left hand, palm outward and thumb separated from fingers, toward the maenad and the rock. This attitude of legs and arms is very similar to that on several vases which portray scenes from the satyr-dramas. Though sometimes the position is reversed and the left hand is on the thigh, the position of the arms and legs is almost identical, while the hand raised and extended with the thumb separated from the fingers is especially frequent.² This certainly seems to be a gesture taken from the satyr-drama and the character-

¹ Pottier, *Douris*, Fig. 11. The nearly contemporary Theseus cylix is the nearest parallel I know of for the rock on the Baltimore cylix, but on the cylix representing a fishing scene, signed by Chachrylion (Hartwig, *op. cit.*, pl. V; cf. also p. 432, pl. XLIII), there is a smaller rock, and such indications of landscape are found rather often on Greek vases (cf. for red-figured vases, Heinemann, *Landschaftliche Elemente in der Gr. Kunst bis Polygnot*, pp. 85 f.). For a somewhat similar scene of a satyr stealing up from either side on a maenad with thyrsus reclining on a rock but asleep, cf. *Annali*, 1878, pl. I.

² Cf. Baumeister, *Denkmäler*, pl. V; *Jb. Arch. I.* XXV, 1910, *Beiblatt* to pl. IV; *Ath. Mitt.* XXXVI, 1911, p. 271, note, for literature, and pls. XIII-XIV; Nicole, *Catalogue des vases peints du Musée National d'Athènes, Supplément*, pl. XVII; Cook, *Zeus*, pls. XXXVIII, XXXIX; *Abh. Sachs. Ges.* XXVII, 1909, No. 22, pl. III; Bates, *A.J.A.* XX, 1916, p. 391, fig. 1, and pp. 393 ff.; Pickard-Cambridge-Haigh, *The Attic Theatre*, 1907, pp. 292 ff.; etc.

istic pose for a satyr as he danced up to some character in the satyr play. Even Myron's Marsyas, as Bates suggests, which has practically the same gesture except for the left hand, may have been inspired by the satyr-drama. It is well-known that vase painters often had in mind such scenes.¹ So it is tempting to see such a scene on the Baltimore cylix; and the interesting rock as a bit of landscape makes the idea very probable. What the scene is I do not know, unless it be a parody of the Jason-Ariadne or, more probably, of the Dionysus-Ariadne story or some similar



FIGURE 4.—CYLIX IN BALTIMORE: INTERIOR BEFORE CLEANING

myth. Such scenes as that in *Monumenti*, X, pl. LI, representing satyrs and Dionysus advancing on the sleeping Ariadne, and those in *Annali*, 1878, pl. I, where two satyrs are stealing up to a sleeping maenad, also in Ionic chiton, would form a transition to our

scene where the maenad has already awakened. Of course it is possible that it is a typical maenad-satyr story such as Pliny, *N.H.* XXXV, 109, says Nicomachus painted (*Bacchas obreptantibus Satyris*), and that the vase-painter took the characteristic satyr to the left from a pattern book or repeated a well-known motif, but even so we should have a reminiscence of the satyr-drama.

The illustrations in Figures 4 and 5 show the cylix as it appeared before cleaning. It seemed to be a complete vase, so well done was the repainting, but part of the drawing was in the style of about 500 B.C. and the rest in the style of about 480 B.C. or later. It seemed incredible that such beautiful and delicate hands should be drawn at the same time with such crude feet.

¹ Cf. *Philologus* XXVII, 1868, pp. 1-27; Heydemann, *Berl. Winckelmanns-Program*, XXX, 1870, pp. 8 ff.; Baumeister, *Denkmäler*, p. 790, fig. 848; in addition to references above.

So I gave the vase a thorough cleaning and to my disgust found that it was made up of many modern pieces, and that the whole had been painted over with red and black so as to look like a complete cylix. The work was very cleverly done, and I had to soak the whole vase for several hours in alcohol to make any impression on the modern paint. Most of it turned out to be in a very crude style. Figures 1, 3, and 6 show what is left of the drawing on the cylix after cleaning. Most of the dancing satyr on the interior is ancient; only the right hand is restored in the drawing. On the exterior, while most of the scene on one side (A) which has been described and thought to be reminiscent of some satyr drama, was found to be ancient, on the other side (B) only the two legs of the satyr to the left,¹ the lower part of the female figure, the hand, which was repainted as a foot, and part of the tail of the satyr

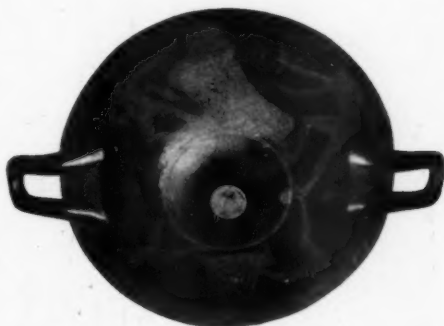


FIGURE 5.—CYLIX IN BALTIMORE: EXTERIOR BEFORE CLEANING

to the right remained after the cleaning. A modern piece joined the lower part of the female figure to the beautiful fragment above (Figs. 6 and 7). This solves the mystery, for this little refined severe red-figured fragment, on the inside of which the black varnish has mostly disappeared, is a little gem.² The whole feeling, the whole technique are different

¹ His attitude is one of hurry. He was running with a long stride, his arms outstretched, one forward, one backward, and his left leg well raised. Cf. the way the figure was restored (Fig. 5). The same attitude occurs on a vase of Brygos, which probably has a scene from a satyr-drama (Furtwängler-Reichhold, *Gr. Vasenmalerei*, pl. 47), and in *Jb. Arch. I.*, XXXV, 1910, *Beiblatt* to pl. IV. The position of the feet also occurs on the New York cylix (Fig. 2, b). This is probably also an attitude taken from the satyr-drama, but this side of the Baltimore vase may simply be a typical satyr-maenad scene such as are so frequent on Greek vases (cf. Hartwig, *Die Gr. Meisterschalen*, p. 452).

² Greatest length 0.077 m.; greatest height 0.05 m.

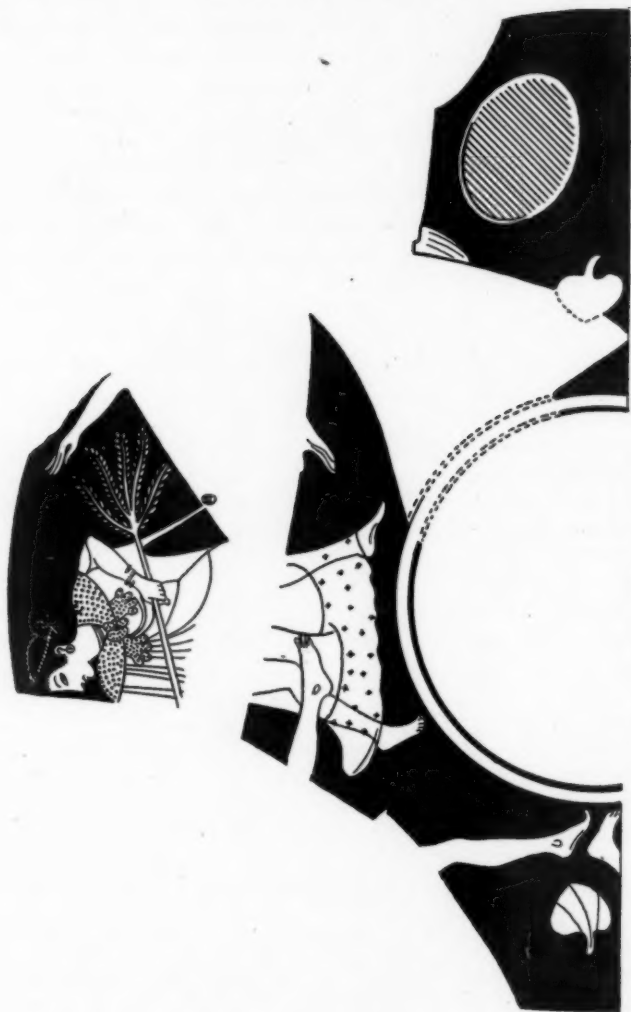


FIGURE 6.—CYLIX IN BALTIMORE: EXTERIOR, SIDE B, AFTER CLEANING

from the crude drawing of the rest of the vase. The delicate hand, as contrasted with the other awkward elongated hands, the wrist with the bracelet, the pointed elbow, the beautiful profile of the face, the interesting eye, the earring on the ear, the

use of red as an accessory, the fine delicate lines on the drapery, as contrasted with the uncertain lines of the rest of the vase, and other features are so different, that I have no hesitation in saying that this fragment does not belong to the vase, and that even the bit of the arm and the hand to the right, which resembles hands on the cylix of Oltos in Corneto, belong to a satyr of another vase. This beautiful fragment I should assign to the vase-painter Oltos¹ from whom we have only two signed vases. One is an enormous cylix in Corneto, of which there is an excellent forgery in the Louvre, called one of the best modern copies of a Greek vase;² the other is a cylix in the Berlin Museum.³



FIGURE 7.—FRAGMENT IN THE STYLE OF OLTOS,
BALTIMORE

If we compare the Baltimore fragment with the Corneto cylix of Oltos,⁴ we see at once the resemblance between the head on

¹ Mr. Beazley of Oxford, to whom I showed this vase when he was in Baltimore, also was inclined to assign the fragment to Oltos, and in his *Attic Red-figured Vases in American Museums*, which will be published by the Harvard Press, he will attribute, I understand, many other fragments and vases to Oltos. Mr. Beazley is the greatest authority on the style of the different severe red-figured vase-painters, and so his confirmation leaves little doubt in the matter, even though scholars seem to be going too far in trying to identify the painter of every vase or picture. Professor Hoppin in his new book on *Euthymides and His Fellows*, p. 30, assigns to Smicros a psycter in New York which Beazley attributes to Oltos. P. 59, he assigns to Euthymides the Leyden amphora which Hartwig gives to Oltos. P. 134, fig. 31, he gives to Phintias rather than to Oltos as Beazley does.

² Reinach, *Répertoire des Vases Peints Grecs et Étrusques*, p. 203, mentions an identical vase found at Bologna(?), which was exhibited at Florence and Paris in 1899. By this he must mean this vase, which is certainly a forgery, although there is a rumour that when it first appeared in Paris a telegram was sent to Corneto that the original had been stolen, so clever was the imitation.

³ No. 2264. Cf. *Wiener Vorlegeblätter*, D. pl. II.

⁴ *Monumenti dell'Inst. X*, 1875, pls. XXIII-XXIV; *Wiener Vorlegeblätter*, D, pls. I, II.

the one and especially the head of Hebe on the other. There is also a resemblance to the heads of Athena and Hestia. The profile, the long continuous line of forehead and nose, and the short strongly retreating lower face, the eye, the line about the hair, the arrangement of the hair itself, and the earring are all similar to those of Hebe on the Corneto cylix and of the female figure on the interior of the cylix in the Louvre assigned to Oltos by Hartwig, *Die Griechischen Meisterschalen*, pl. VI. Many of the figures, such as Aphrodite, Hestia, and the maenads, on the Corneto cylix wear a similar bracelet. The panther's skin about the neck and even the drapery resemble those on the maenad behind Dionysus on the Corneto cylix and also the maenad on the Louvre cylix. The figures have the same sort of elbows and hands and wrists. The three lines about the neck also occur on Hebe and on the female figure in the interior of the Louvre cylix. On the exterior of the Berlin cylix the head of Iris, turned also to left, is extremely similar, with same profile, eye, earring, and same arrangement of hair, and she has dots on her wings. The profile and hair and ear and especially the nose and small retreating jaw of Antilochus are similar. On the interior the profile of the warrior, his curly hair, the shape of his ear and chin, and the smile on his face are similar. The hands, elbows, and drapery are also in the same style.

Still other points of resemblance to the work of Oltos could be pointed out, but enough has been said to dispel all doubt that the Baltimore fragment shows the same style as the signed cylices of Oltos and the other vases which scholars have attributed to him. The facts about what pieces are modern, about the drawing, and other points are made clear by the illustrations, and do not need comment. The Baltimore cylix after a thorough cleaning has yielded an important and beautiful fragment in the style of Oltos, as well as portions of a cylix with a rather rare representation of a rocky landscape, and an extremely interesting scene which recalls the satyr-drama, even if the style is not as refined and careful as that of the Oltos sherd.

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THE DATE OF THE GREAT CHALICE OF ANTIOCH

NEITHER time nor space permitted me to enter fully into the very important question regarding the date of the chalice of Antioch, and in my preliminary report¹ on this subject there is no reference to some points which had not then become clear. Since that report I have found no evidence of a later date than that which I there assigned to the ornaments of the chalice, but some new evidence which confirms my former views. My general conclusion is that the form and proportions of the chalice, belong, in their origin and development, to the period included between the middle of the second century B.C. and the beginning of the second century A.D., and that the date of the inner bowl must be twenty or more years earlier than the ornaments, the execution of which must fall in the second half of the first century A.D.

The reasons for these conclusions will be developed below.

Chalices Figured on Coins of Simon.—The earliest type of a chalice possessing the form and proportions of the Antioch chalice (Fig. 1, 2) is to be found on coins of the middle of the second century B.C. There are many coins of this type,² especially those of Simon Maccabaeus, 141–142 B.C. On these coins we find a chalice, with or without handles (Fig. 1, 5). The bowl is a truncate ovoid with a narrow, slender and remarkably short stem, characterized by a *nodus* of spherical form, just as on the chalice of Antioch. The stem is slightly higher than the stem of the chalice, but the disk forming the foot is narrow, as on the chalice. The relative proportions of bowl, stem, and foot are almost the same, with the exception of the slightly higher stem already mentioned. The important point is that the form of the bowl, the spherical *nodus*, and the narrow foot existed already at

¹ A. J. A., XX, 1916, pp. 426 ff.

² For Jewish coins with chalices cf. L. Anson, *Numismata Graeca*, pls. I and VI; figs. 360, 361, 363, 367. About 137 B.C.

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that early date, and that the *nodus* was not a late Christian invention, as some have suggested.

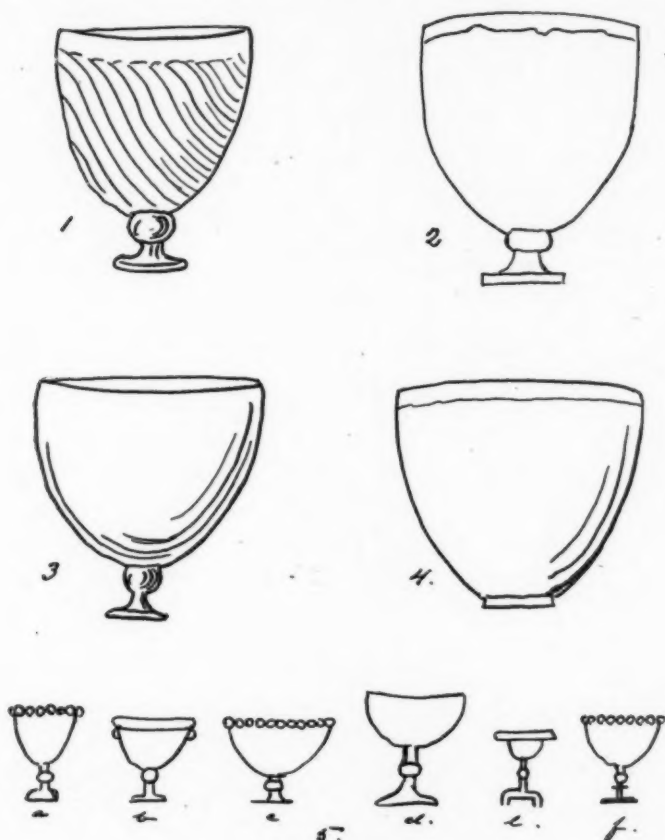


FIGURE 1.—CHALICES

1. A small glass chalice. First century A.D. Private collection in New York. Found in Syria.
2. The chalice of Antioch.
3. Chalice from a painting in Pompeii. First century A.D. After Roux.
4. The Cup on the Arch of Titus.
5. Six types of holy vessels, probably from the Temple in Jerusalem. From Jewish coins of the middle of the second century B.C.

The Treasure of Boscoreale.—The form of the bowl of the chalice is similar to many of the bowls of the cups in this treasure.¹ The ovoid shape was common in the first century, having been continued from the second century B.C. as has already been described. It was by no means a new invention, although cups of this form are rare in the period immediately preceding Augustus and Tiberius. In the Boscoreale cups we see this similarity not only in the form of the bowl, but also in the proportions of the bowl and the stem. In these too we have the lip turned over in the form of a low collar. The only difference between the chalice and these cups is that the chalice possesses no handles, and that the cups do not possess a spherical *nodus*. As, however, cups, datable in the first century A.D., are known without such handles and also furnished with a spherical *nodus*, having also the form and proportions of the chalice and the Boscoreale cups, these two differences lose every value. Not one single specimen of this form and with such proportions has been found of a date later than the first century A.D. Some, however, are earlier.

*The Cup on the Table in the Arch of Titus.*²—Here too the form of the bowl (Fig. 1, 4) is almost a copy of the bowl of the chalice. There is no stem on this cup, and we can conclude that if there were one the artist would have shown it, provided it had been conspicuously large. If this cup had had a very low stem, like that of the chalice, the artist might well have neglected to represent it. There is, however, a very narrow disk at the foot like that on the chalice. This cup is a great puzzle, as no vessel of this type is known to have been in the temple of Herod. There are many representations of the temple vessels extant, but as I am preparing a special paper on this subject I do not desire at present to enter upon any discussion, especially as these vessels have not been individually studied. Some of them are figured on a gold glass in the Museo Cristiano in the Vatican. On the bottom of this glass we see a perfect representation of the Temple of Herod and an inscription which leaves no doubt about its real nature. It is the only authentic representation known. Below the temple we have a row of the holy vessels, the two urns for the manna, the incense burner, and others. But none has the

¹ A. Héron de Villefosse, 'Le Tresor de Boscoreale,' *Mon. Piot*, V, 1899 pp. 7-290.

² A good reproduction is in C. Adler and I. M. Casanowicz, 'Biblical Antiquities,' Smithsonian Institution, 1899,

form of the cup on the relief. The nature of the cup is thus in doubt, but the date is not, because the cup could not be later than the triumph. It must have been one of the spoils, though perhaps not necessarily one of those actually brought to Rome. We know that Titus placed the two Cherubim from the Ark of the Covenant on the city gate of Antioch, and therefore did not bring everything to Rome. The trumpets from the temple are represented on the Arch in connection with the cup.

Pompeian Wall Painting.—A chalice of the exact form and proportions of that of Antioch is seen on a wall in Pompeii (Fig. 1, 3).¹ It has not only the bowl and proportions of our chalice, but also its spherical *nodus*. The date of this vase is, of course, not later than 79 A.D. As no similar representation is known of a later date, this painted vessel alone would suffice to place the form and proportions of our chalice in the second half of the first century, even if no other evidence existed.

Glass Vessel of the Exact Form and Proportions of the Chalice.—While not a single glass, terra-cotta, or metal vessel of the form and proportions of our chalice has been found later than the first century, one at least, besides those mentioned, has been found which with absolute certainty can be dated in that century. This object is a small glass vessel (Fig. 1, 1) about three inches high, made of clear, once probably translucent glass, which is now iridescent. It is almost an absolute copy in miniature of the Antioch chalice. There is the same ovoid truncate bowl, remarkably short stem, spherical *nodus*, and narrow disk at the foot. Its surface is covered with parallel shallow and curved flutings from *nodus* to lip. Such a type of fluting is known in glass vessels of the first century, but is not found later than the second century. Combined with the character of the form and proportions it helps to date the object in the first century. This bowl was found in a Syrian tomb, and is now in a private collection in New York.

The Augustus Cup.—As reference has already been made in my previous article to this cup, which is a part of the Boscoreale treasure, it is only necessary to mention that the important similarities with the ornaments of the chalice are three: the pose of the figures of Augustus and of Nos. 1, 3, and 8 on the chalice, the platforms of the thrones (Fig. 2, 10-13), and the dress. The artist of the chalice might have had these or similar representations before him when he chased the ornaments.

¹Roux *Herculaneum et Pompéi*, IV, Ser. 3, pl. 115.

Arretine and Green Glazed Pottery.—With these two types of pottery of the early empire the chalice of Antioch has many points in common. On these vessels, generally of medium to small size, we find an ornamentation of stems with leaves and bunches which not only show the naturalistic style of the corresponding objects on the chalice, but which sometimes are arranged in the same manner, issuing in pairs from the ground line. These vines are sometimes joined at their tips and tied with a bow and knot as on the chalice.¹ Many of the vases are ornamented with rosettes similar to those on the chalice, singly, in pairs, or in groups, or in a continuous band under the lip. The latter arrangement, so similar to that of the chalice, is seen on a magnificent specimen of Arretine pottery in the Metropolitan Museum.² This vase is signed "Tigranes," and cannot be later than the middle of the first century. Much of the green glazed pottery of this period is ornamented with figures which in position and arrangement resemble those of the chalice. In fact it seems evident that the artist of the chalice had some of these vessels and their ornaments in his mind or actually before him, when he designed those of the chalice. He even seems to have been greatly inspired by their ornaments, adopting arrangement as well as details. This he could hardly have done unless he actually belonged to their period, as few of these vessels survived the first century A.D., their period of manufacture being in the first century B.C. and the first century A.D. After the latter century these vessels were replaced by the cheaper and more fashionable glass.

The Naples Cameo Vase.—The wonderful cameo vase in blue and white glass in the Museum of Naples is too well known to need any description, and figures of it are found in most books on art. The best that I have seen is that by Zahn in natural colors.³ It has besides the advantage of showing the vase also from the side of the vines. We recognize at once two striking similarities with the ornaments of the chalice. The two vines on the vase rise from the ground line as on the chalice, and form an upper

¹ Similar bowknots in connection with vine branches are also seen on a silver cup of the Hildesheim treasure according to Blumè, *Der Hildesheimer Silberfund*. Hildesheim 1905.

² Gisela M. A. Richter, 'Hellenistic and Roman Glazed Vases,' *B. Metr. Mus. March*, 1916.

³ Zahn, *Die schönsten Ornamente aus Pompeii, Herculaneum, und Stabiae*, pl. 77.

loop and a lower arch almost exactly like those on the chalice. The resemblance goes even further. The place which on the chalice is occupied by the seated figure No. 1, is on the vase occupied by a group of four rosettes like those on the marble table in the Metropolitan Museum. The place occupied by the eagle is on the vase occupied by a large mask which also extends down into the lower arch, here replacing the basket. The

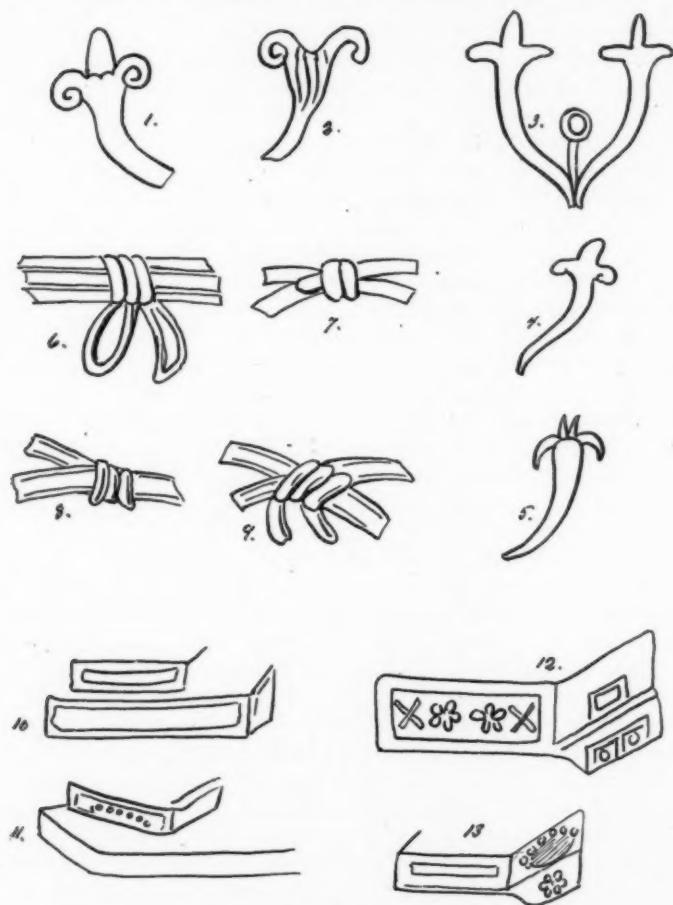


FIGURE 2.

vase could in fact very well have served as a model for the artist of the chalice. That the technique and style of the vines of the vase are different does not contradict this assertion, because they were naturally modified in order to suit the material. The vines and tendrils on the vase could be cut as slender as the artist desired, while those on the chalice had to be robust in order to permit of soldering to the surface of the matrix of the bowl.

The Naples Glass Goblet.—This glass,¹ the size of a tumbler, is ornamented with several vine-trunks with leaves and bunches in the robust style of those of the chalice. They follow each other spirally in the manner of the fluting of the small glass vase already mentioned. On the ground line is a rabbit in the act of attacking a bunch of grapes. Among the leaves is a dove. Closely related to the ornaments of the chalice, but less skillfully executed, this goblet is of importance for the date of the chalice. It was buried by the eruption of 79 A.D.

A Roman Support for a Table.—In the Metropolitan Museum of New York is a very fine marble support for a table in the Pompeian style. It consists of an upright slab with sculptured sides. The ornament is composed of grapevine stems which form loops in the manner of those on the chalice and on the Naples cameo vase. The tips of the vine stems end in cornucopia buds as on the

¹ A. Deville, *Histoire de l'Art de la Verrerie dans l'Antiquité*, pl. 9 B.

EXPLANATION OF FIGURE 2

END BUDS AND CORNUCOPIAE

- 1 and 2. End buds of the vine. Chalice of Antioch.
3. Cornucopia,—flower or bud. Coins of Herod. After Madden.
4. Cornucopia. Coin of Titus. After Madden.
5. Cornucopia. Coin of Agrippa. After Madden.

BOWKNOTS CONNECTING THE VINE TIPS

6. Three stems tied together. Green glazed Samian cup. First century. Boston Museum of Fine Arts. From a photograph furnished by the Museum.
- 7, 8, 9. The three principal types of knots on the chalice of Antioch.

THRONE RESTS AND PLATFORMS

10. Lower part of the throne of the elder Augustus. Cup from Boscoreale. Collection of Baron Edmond Rothschild, Paris.
11. The same part of the throne of the Youthful Augustus. Same cup.
12. The lower part of the throne of figure No. 1. Chalice of Antioch.
13. The same part of the throne of the youthful Christ. Chalice of Antioch.

chalice, while the central loops contain various rosettes, almost exact copies of those seen in the central loop of the Naples cameo vase. This marble stand thus connects directly the Augustan period, the Naples vase, and the chalice ornaments with each other. The stand undoubtedly belongs to the first century A.D. and is labelled by the Museum authorities as of the Augustan period.

The Grape Vine in the Catacomb of Domitilla.—This vine is the only one in the catacombs of Rome which shows a conspicuous similarity with that of the chalice. It is also the earliest, by some placed at the end of the first century A.D.¹ It is the only vine in the catacombs or on sarcophagi which possesses the characteristic loop of the vine on the chalice.

End Buds like Cornucopiae and Fleur-de-lis.—Ten or more of the end buds of the vine on the chalice possess peculiar forms, resembling cornucopiae and fleur-de-lis. The types are shown in Figure 2, 1, 2. Similar end buds are not found among the vines of the late sarcophagi but are seen on coins and reliefs of the first century A.D., as, for example, coins of Herod, Agrippa, and Titus, (Fig. 2, 3, 4, 5).² These figures are generally identified as cornucopiae, but those on the coins of Herod seem to represent a round fruit between two end buds. Similar end buds are also found on the marble table mentioned above and on various other reliefs of the first century. The stems of both buds and cornucopiae widen towards the apex, thus increasing the resemblance.

The Eagle.—The eagle on the chalice shows a conspicuous similarity to the eagles before and of the first century A.D. (Fig. 3), but little or no similarity with eagles of a later date. No similar eagle has been found on any other Christian object, whether wall painting or sarcophagus relief. The type is that of classic Greek eagles with lifted and spread wings, such as are found on the coins of several cities in Asia Minor, for instance those of Apameia and Acmonia in Phrygia.³ Both of these cities are near Antioch and the artist of the chalice must have been acquainted with their coins. The similarity between the eagles is too great to be accidental. Somewhat

¹ E. Hennecke, *Altchristliche Malerei und Altkirchliche Literatur*.

² F. W. Madden, *Coins of the Jews*, pp. 88-91, 122, 124.

³ Smith, *Dictionary of Greek and Roman Geography*, s. v. *Acmonia* and *Apameia*.

similar eagles, but less artistically executed are found on coins of Domitian and Hadrian.¹ That the form was used in decoration in the first century we know from a representation found in Pompeii.² The similarity to that on the chalice is obvious.

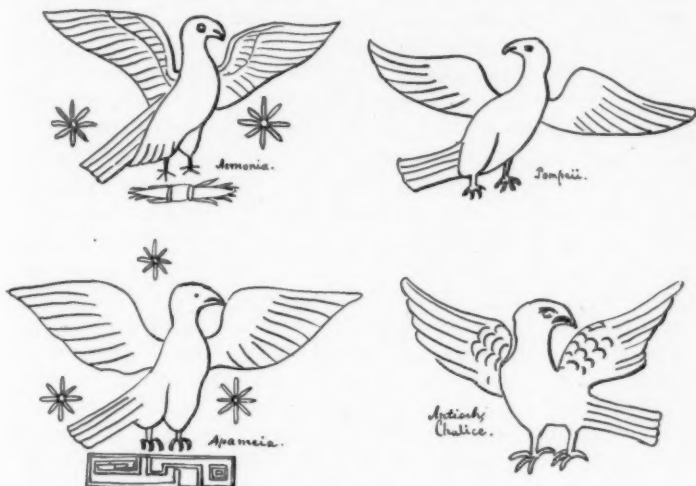


FIGURE 3.—EAGLES.

Amonia. From a coin of that city. After Smith, *Dictionary of Greek and Roman Geography*.

Pompeii. After a painting in Pompeii. First century A.D. Roux.

Apameia. From a coin of that city, after Smith, *op. cit.*

Antioch. Chalice.

The Seated Figures.—The heads of the figures need little further reference than that which was given in my first paper, in which I endeavored to show that such representations could be nothing but portraits, made by an artist who had actually seen those he portrayed or who had access to actual portraits. Only one who has seen the persons he portrays can infuse such life, such personal characteristics, and such feelings of individuality as our artist has done. The heads show a classic style and treat-

¹ Domitian, *Collection du feu M. N. Montagu, Monnaies d'or* (Sale catalogue), Paris, 1896. Hadrian, J. Y. Akerman, *A descriptive Catalogue of rare and unedited Roman Coins*, p. 231, pl. 6.

² Roux, *Herc. et Pomp.* III, ser. 2, pl. 94.

ment. Each contains its distinct thematic form, which is repeated in the dress and ornament pertaining to that figure. Each figure is also invested with a distinguishing arrangement of lines, generally curved, carried out from the head through the figure and surroundings. This continuation and extension of harmonious lines is a powerful contribution to the sense of grandeur in these miniature heads; and at the same time attributes to each figure its theme. These considerations establish the designer of the heads on the chalice, who was probably also their sculptor, as an artist profoundly learned in the ultimate mysteries of his craft; the possessor of knowledge not revealed in any other extant works of his period. The skill with which he applied his knowledge is surprising and shows that he stood at the very height of his profession. The school of composition represented in the gracious, noble arrangement of line and form is a direct survival of the best traditions of Greek design; of the principles that animate in common the best work ranging from shields to the structure of temples. The more important of these principles had practically dropped out of use before the Christian era, and their application became increasingly rare until the time of Constantine, when the last vestige of this art disappeared. Their use at a time of artistic decline stamps their possessor as an artist unique in his century, so far as is revealed by existing records.¹ The heads of the chalice are individualities. Those on the Augustus cup, though wonderfully well made, give us the feeling that they represent more a type than individuals. After the end of the first century it is rare to find anything but types. This is shown in the various so-called portraits, which, though they might reflect considerable personal likeness, rarely show the characteristics of mind and temperament, as do those of the chalice. The later artists could better represent the evil characters of the persons portrayed than the nobler ones. The nobility, spirituality, and force represented by the heads on the chalice are not found in any works, that have been preserved, later than the time of Nero, Titus, and Trajan.

Hair and Beard.—The hair and beard show a great variety of treatment which would not have been probable after the second century. The long curls hanging down the back and resting on

¹The analysis of the scheme of composition upon which the chalice decorations are based has been made by Mrs. Margaret West Kinney, who is making etchings of the heads of Christ and the Apostles.

the shoulders of some of the figures show that the artist portrayed the apostles as Jews, and gave them features of a strong Jewish type. The fashion of long curls has survived among the Jews to our day, but is not found in the catacomb paintings in which the artists discarded all realistic Jewish features. The hair and beard of the figures thus support the theory of the date in the first century.

The Eyes.—The treatment of the eyes does not show any stereotyped standard, but on the contrary a variety of methods that could scarcely have been possible after the second, much less after the third century. The eyes in each of the twelve figures are treated differently, the artist evidently having searched for methods by which to express the feeling and individuality he desired to give to each of the personages he was portraying. The treatment of the eyes by various methods thus supports the early date assigned to the chalice.

The Dress.—The fact that the dress of all the seated figures is the toga indicates to some extent the early date of the chalice. Already at the end of the first century the toga had been almost discarded as a costume for daily use and replaced by the pallium and the tunic.¹ All the early representations of Christ and the apostles show them in the pallium, while later ones show them in the tunic or in various other garbs, more or less resembling the oriental dress of today.² After the first century the toga was reserved for magistrates, judges, and finally for consuls. With the death of the last consul the Roman toga disappeared. If the figures on the chalice were made after the first century, we should expect to find them in the pallium. On the contrary Nos. 1 and 8 are dressed in most elaborately as well as artistically draped togas, while in the other figures the toga is represented slightly less elaborately. There are not only points of resemblance between the togas on the Augustus cup and those of figures 1 and 8, but the resemblance of the emperor's toga with that of figure 3 is apparent. The similarity is enhanced by the pose of the two figures, and one would be justified in assuming that the artist of the chalice had actually been inspired by this cup, or by some contemporary object similar to it. The resemblance is too great to be accidental.

¹ Clark D. Lamberton, *Themes from St. John's Gospel in early Roman Catacomb Painting*, p. 30.

² O. M. Dalton, *Byzantine Art*.

That neither Christ nor the apostles ever wore a toga is probable, and all that we can conclude is that the artist used the garment which he considered most worthy of their (religious) rank.



FIGURE 4.—HANDS AND SCROLLS

Had he lived at the time of later emperors, or in the time of the Ravenna mosaics, he would naturally have given his figures the imperial garments of that period and not the toga. The fact that he dressed them like emperors of the early empire, and especially like Augustus, points inevitably to a very early date.

The Handles of the Scrolls.—While we cannot derive any direct evidence from the handles of the rods on which the scrolls are wound, still the circumstantial evidence furnished by them is of considerable value. According to Latin writers, the ancients in the time of the early Roman emperors used knobs and buttons of metal at the end of such rods. Among the innumerable Christian and pagan representations of scrolls in painting and sculpture not more than half a dozen or so show any indication of such knobs. These are all of diminutive size, and not like those of the chalice. Unfortunately there exist no Jewish representations of their knobs and handles until late mediaeval or early Renaissance times.¹ These, however, are all much larger than the

¹ L. Loew, *Graphische Requisiten und Erzeugnisse bei den Juden*, p. 127.

EXPLANATION OF FIGURE 4

FIGURE 4.—HANDS AND SCROLLS

2. Left hand of figure No. 2, possibly a sword handle. Chalice of Antioch. All these figures are much enlarged.
3. Left hand and scroll of seated figure No. 3. Chalice of Antioch.
4. Left hand and scroll of figure No. 4. Chalice of Antioch.
5. Left hand and bag, figure No. 5. Chalice of Antioch. The object in the hand is doubtful. It resembles a bag, but might have been intended as a scroll.
6. Left hand and scroll of figure No. 6. Chalice of Antioch.
7. Left hand and scroll of figure No. 7. Chalice of Antioch.
8. The left hand of Christ, figure No. 8. Chalice of Antioch. The Scroll of the Thora or Law. Rolled on two staffs. Indistinct inscription or sign in the centre.
9. Left hand and scroll of figure No. 9. Chalice of Antioch.
10. Left hand of figure No. 10. Chalice of Antioch.
11. Two views of the left hand of figure No. 11. Chalice of Antioch.
- 12, a. The left hand and scroll of the elder Augustus on the Augustus cup of the Boscoreale treasure. Collection of Baron Edmond Rothschild, Paris.
- 12, b. The left hand and scroll of the young Augustus. The same cup.
13. An ancient scroll of the Law in the hands of Susanna. Wall painting in the catacombs of Rome, after Palmer.
14. The scroll of Esther. Old Jewish MS.
15. Top of scroll, painting in Pompeii. Attached to the edge is the title.
- 16, a-g. Seven different Jewish scrolls of books of the Old Testament, showing various forms of handle.

others, and in form quite similar to those on the chalice (Fig. 4). Assuming, as we can with reason, that the Jewish types of ornaments and implements continued with little change for centuries, we can conclude that the knobs on the chalice show a Jewish type. Such a type would never have been copied by the Christians after the first century A.D. but might very well have been copied in the first century, before the rupture with the Jews was complete. The scrolls, no doubt, indicate the missionary work of the apostles, their preaching and writings, and the artist placed them on a par with the books of the Old Testament, giving them the same outward form. All the scrolls differ individually: this probably with reference to the individual work of the apostles. After the New Testament had been collected, I think, the artist would not have made individual scrolls, but one common type for all, such as we find in painting and sculpture, in the catacombs and elsewhere.

The Phylactery.—A careful examination of figure 9 on the chalice reveals the highly interesting fact that his right arm is wound with the band called by the Jews, "Tephillin," and forming a part of the arm-phylactery which every orthodox Jew was commanded to wear at prayer.¹ We can count the seven or eight turns of the band and follow it into the palm of the hand, where we see the ends crossed. The small box containing the

¹ Compare the illustrations in J. C. Bodenschatz, *Kirchliche Verfassung der heutigen Juden*, Erlangen, 1748, part IV, ch. 1, and Paul Christian Kirchner, *Jüdisches Ceremoniel*, Nürnberg, 1726, pl. between pp. 6 and 7.

EXPLANATION OF FIGURE 5

FIGURE 5.—ARM-PHYLACTERIES

- 1, a. Left hand, the back. After Bodenschatz.
- 1, b. Left hand, the palm and elbow joint. After Bodenschatz. Observe the box in the elbow joint.
- 1, c. Enlarged illustration of the same box and its end strap. Middle of eighteenth century.
2. Right hand phylactery, back of hand. After Kirchner. Eighteenth century. Like that on chalice, figure 12.
- 3, 1. Back of left arm. After the *Jewish Encyclopedia*, s. v. Phylactery.
- 3, b. Left arm, inner side. Box in the elbow joint.
- 3, c. Enlarged figure of the box in the elbow.
- 9, a. The right arm of the apostle No. 9, on the chalice of Antioch. The large loop pendent below the box in the elbow joint is probably not a part of the phylactery, but perhaps a waist cord.
- 9, b. Enlarged illustration of the box in the elbow and the bow on the end; from the same figure.

inscription on the parchment slips is also represented. It is seen as a small circular object in the elbow joint of the same arm. A phylactery is also found on the right arm of figure 12 of the chalice. It is almost exactly the arm phylactery of a right arm pictured by Kirchner, *l.c.*, figure 2. Thus on the chalice we have a phylactery on both the interior and the exterior of the

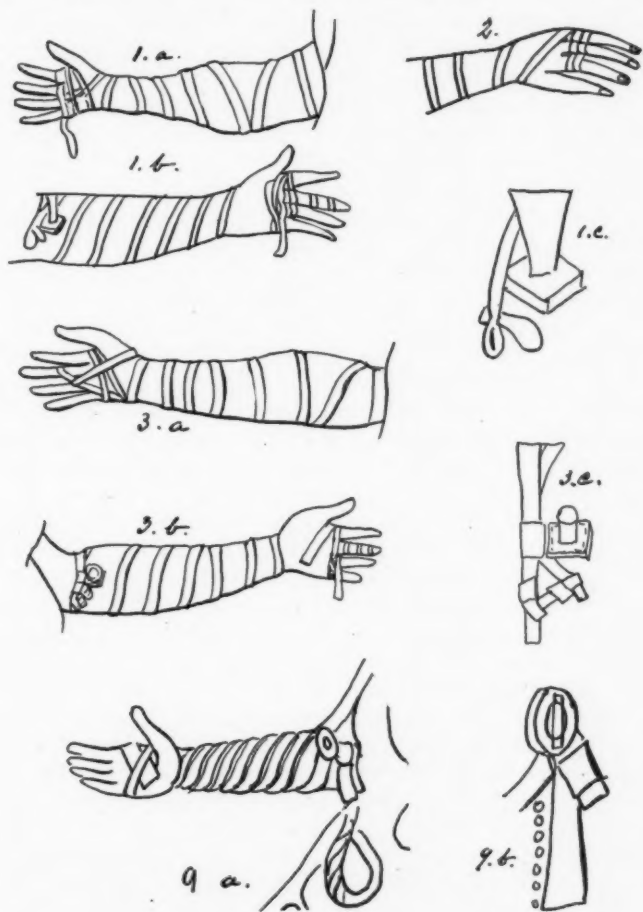


FIGURE 5

arm; and as both representations agree with those given by modern authors as being in use in recent years, we must consider the phylactery on the chalice as fully established. No figure in the catacombs possesses a similar phylactery, and it is probable that it was not general even among the earliest Christians. It was never adopted by the Christian Church, hence its value in dating the chalice. The apostle might have continued to wear it from old habit. The wearing of the phylactery was never condemned by Christ, although he condemned the habit of the Rabbis to increase the size for the purpose of show.

The Date Cannot be Later than the First Century.—Having thus enumerated the reasons for placing the date of the chalice in the first century, it now remains to review the reasons why the chalice could not have been executed after the end of this century.

There is not a single vessel of the *form and proportions* of the chalice known after the end of the first century. If the chalice had been made later, it would no doubt have possessed the same form and proportions as the many chalices represented on tombstones, sarcophagi, etc., of the period. All such chalices possess large handles, wide, probably fluted, bowls, and a narrower opening, in the style described and figured by Schnyder.¹ It might also have resembled the earliest known chalice, the Gourdon cup, which in turn resembles the Lycurgus cup.² Or perhaps it would have been given the form of the chalice represented in Cinque Santi.³ All these cups were more like a *carchesium*. The *dress* of Christ and the apostles would, if the ornaments had been made after the beginning of the second century, have been the pallium, the tunic, or the dalmatic, and not the toga. The *grape vine* would have resembled the painted vines of a later date, or the mosaic vines represented in S. Costanza, the Baptisterium of Constantine, and not the vines of the first century. The *heads and faces* of the figures would not have possessed a classical type and technique, if executed after the time of Hadrian. At the very best they would have partaken of the type seen on the Column of M. Aurelius, or that seen in the catacombs and on the sarcophagi of the time of Constantine. The faces would have been stereotyped or at least generalized. The *lotus* ornaments on

¹ W. Schnyder, *Die Darstellung des Eucharist. Kelches auf altchristl. Grabinschriften Roms*. Rome, 1900.

² Kisa, *Das Glas im Altertume*, fig. 233.

³ F. X. Kraus, *Geschichte der Christlichen Kunst*, I, p. 50.

the cup or on the foot would probably have been replaced by the acanthus leaf. There would have been no *phylactery* of a strictly Jewish type. The *eagle* would not have resembled the Greek and Roman eagles with lifted and spread wings, but would have resembled those of the later period with folded wings. And finally, in regard to the *technique*, not one single head or face of Christ, apostle, saint, or private person has come down to us from a period later than the end of the first century, which was executed with the skill, delicacy, feeling, and naturalism, shown in the heads of the apostles. No such heads could have been executed between the first century and the Renaissance.

The Assemblage.—One of my correspondents writes as follows:—"The strongest reason for dating the chalice to the time of Constantine, is the fact that the principal theme—Christ seated in the midst of Apostles—is unknown among extant remains of Christian art before the Peace of the Church. It is a theme that attained sudden popularity in the reign of Constantine. It is not easy to conceive for what reason it was not used before or why it became popular then." This argument would have some weight, if this theme had been invented at that time, but since we find similar figures on the Augustus cup, we can conclude that the motive was already known. Nor can a single uncertain argument offset all the proofs offered in this paper, especially when we find that there is no similarity whatsoever between the art and the technique of the seated figures of the Constantinian period and those of the chalice. None of the figures draped in the tunic of the late period with their stereotyped faces, expressions, and dress can compare with those on the chalice. The assemblage in general might indeed show some similarity with later works, but the details, which are more important, are so conspicuously different, that the comparison leads to a differentiation in the dates.

There is no difficulty in explaining why, during and after the Constantinian period, the custom arose of representing Christ surrounded by a number of apostles seated on thrones. Up to that time the Christian artists had been confined in their painting to the narrow and low chambers in the catacombs. But with the freedom and peace of the Church the room became unlimited; the artists expanded their works, transferring their labor from the underground vaults to the walls of spacious cathedrals and churches, where the larger space to be ornamented with painting

and mosaic made the use of the "large assemblage" not only advisable, but desirable and necessary. The artists then revived the practise of representing prominent personages seated on thrones and surrounded by attendants and followers.

GUSTAVUS A. EISEN.

NEW YORK, N. Y.

ANCIENT ORIENTATION UNVEILED

II¹

ETRURIA AND ROME

IT WILL save repetition if Etruria and Rome are treated together. Rome adopted or experimented with all the Etruscan forms of divination and ceremonial that contained the element of orientation, as well as continued the practises she inherited from her Latin and Sabine brothers. She was also familiar with the practises of the Marsi, the Umbri, and other Italic tribes.

The material can be classified under two main heads: divination by birds, which is Italic and Roman; and divination by thunder and lightning, which is Etruscan.² Both these classes must be studied in connection with something we have not yet encountered, a consecrated and determined area called a *templum*, within which the phenomena are noted. It is in this matter of the *templum* that Etruria and Rome made the most important contribution to the science of Orientation.

Before discussing the *templum* and its orientation, it may be said at once that there is no exception throughout Italy to the lucky left and to southern heavenly orientation.

The earliest first-hand record is in the fragments of Ennius (c. 200 B.C.), especially in those that describe the founding of Rome by Romulus, under the favorable auspices of the twelve left-hand birds. Ennius distinctly states that Romulus sought the *laevum genus altivolantum*. Cicero, himself an augur, points

¹ For Part I, see *A. J. A.* XXI, 1917, pp. 55-76.

² Divination by the liver of the victim, which is also Etruscan, is not considered here because, while orientation and the lucky left apparently entered into its ritual, they did so in a way so subordinate to other phenomena as to make it unnecessary to discuss them here, for lack of data. It can be said, however, that here also the left side was lucky, and that the left hand was used in handling the liver; that there were sixteen divisions in the left lobe, corresponding to the Etruscan divisions of the heaven for divination; that, in a way, the liver was a reflection of the heavens.

out the contrast between the Roman theory of the lucky left and the Greek theory of the lucky right: "to us left-hand things seem the best, but to Greeks and barbarians right-hand things" (*Div. II*, 39, 83). Ovid, in the *Fasti* (IV, 833), speaks of favorable left-hand thunders at the founding of Rome. Plutarch discusses the lucky left-hand birds in his Roman Questions (78). Virgil in the *Georgics* (IV, 7) refers to the *laeva prospera*. The foremost Roman antiquarians, Varro and Festus, furnish abundant material on the lucky left. So do the Plinies,¹ Lucan,² Dionysius, Plautus³, Servius, etc. These data will be given in detail later. The very term "sinister" meant the opposite to the Romans: it stood for "lucky."

The unwillingness of the modern mind to grasp this connection of luck with the left has tinged a number of the discussions of this question and led to such palpable absurdities as the denying that when the Romans said "left" they really meant the left side.

Among those who have written on this subject the principal are K. O. Müller,⁴ Valeton,⁵ Nissen⁶ and Regell.⁷ Of these Regell has most closely approximated to the truth.

The first question is a definition of the *templum*. It was of

¹ The elder Pliny will be quoted later. The younger, in his *Paneg.* 5, 3, says: *ceteros principes aut largus cruor hostiarum aut sinister volatus avium consulenti-bus nuntiavit.*

² *Phars.* I, 596: et doctus volucris augur servare sinistras.

³ *Pseud.* 2, 4, 72: avi sinistra, auspicio liquido.

⁴ Müller, *Die Etrusker*, ed. Deecke, II, pp. 114-195.

⁵ I. M. I. Valeton, *De modis auspicandi Romanorum*, with abundant quotations, in *Mnemosyne*, XVII, 275-325, 418-452; XVIII, 208-263, 406-456. Out of Varro's three classes Valeton elaborated a theory of five classes of *templa*: (1) Seat of the gods, in the north, the gods facing south; (2) terrestrial auspicated *templum*; (3) infernal or subterranean regions; (4) expanse of heaven or celestial *templum*; (5) aerial *templum*, inaugurated on earth. He opposes Regell, who finds only three temples in Varro, and asserts that Regell confuses (1) and (4) as well as (2) and (5). But Regell in quite correct and Valeton's theory has been received with but little favor. This applies also to his assertion that the terms *right* and *left* in orientation refer to the gods, who live in the north and whose left would be the east, and have nothing to do with the direction of the augur or magistrate.

⁶ H. Nissen, *Das Templum* (1869) and *Orientation* (1906). The latter is an enlargement of the former work. The main emphasis is on the orientation of temple buildings and cities, with elaborate astronomical calculations, and it deals only in a secondary way with the other parts of the question.

⁷ P. Regell, *Fragmenta auguralia* (Dissert. Hirschberg, 1882); *De augurum publicorum libris*; and, especially, *Die Schautempla der Augurn* in *Jb. Phil. Päd.* 1881, 593-637.

three kinds, according to Varro's classic and authoritative definition. He says: "We speak of a *templum* as of three kinds: as according to nature, as established by auspices, as according to analogy. That is, as it is constituted by nature in the heavens, by auspices on the earth, and by analogy [i.e. to the heavenly] under the earth."¹

Heavenly Templum.—The heavenly *templum* is the entire expanse of heaven, circular in outline.² It was divided for purposes of divination into four sections by the Romans, and further subdivided into sixteen sections by the Etruscans. The signs observed in the heavens possessed different meanings according to the section in which each appeared. These divisions were made by the diviner with his sacred curved wand or *lituus*. He faced southward. He waved his wand from south to north across the heaven, making a straight line which was called the *cardo*, from its corresponding to the axis or pole on which the universe revolved. This divided the world, both earth and heaven, into two halves, an eastern and a western. It was bisected at right angles by another line, running from due east to west. This line was called *decumanus*.³ Varro says that these four sections of the *templum* are called "the left part on the east, the right part on the west, the front part on the south and the rear part on the north."⁴ Another passage of Varro is quoted by Festus, to explain why the left-hand birds in augury are considered lucky. He says that left auspices are lucky because the eastern side of the world is on one's left hand in the ceremonies of consulting the gods. "When the auspices are taken from the seat of the gods [the augural seat] facing the south, the fact that the orient is on the left and the occident on the right is the probable reason why left-hand auspices are considered superior to right-hand auspices."⁵

¹ L. L. VII, 6-13: *Templum tribus modis dicitur: ab natura, ab auspicando, a similitudine; ab natura in caelo, ab auspiciis in terra, a similitudine sub terra.*

² Varro, *ibid.*: *quaquia intuiti erant oculi, a tuendo primo templum dictum quocirca caelum qua attuimur dictum templum.*

³ The term *decimanus*, or *decumanus*, does not apply with certainty to this transverse heavenly line. It is likely to have been connected with land surveying.

⁴ *Ibid.*: "*Eius templi partes quattuor dicuntur, sinistra ab oriente, dextra ab occasu, antica ad meridiem, postica ad septentrionem.*"

⁵ Festus, s. v. *Sinistrae* (p. 339): *Sinistrae aves sinistrumque est sinistimum auspicium id quod sinat fieri. Varro l.V Epistolicarum quaestionum ait: 'a*

Festus not only here quotes Varro for the lucky left and southern orientation but gives two other early authorities for the same facts: Cincius, and Sennius Capito. He also states on his own authority that "the part of the heaven to the south is called the front and the northern part the back and these are subdivided into east and west." The first part of this sentence is taken, word for word, from Cicero.¹ In Cicero we find a number of corroborations, which is natural, as he was an augur and wrote on divination.² A notable passage is that in which he describes how the boy Attus Navius, who afterward became a noted diviner, used the *templum* ceremonial to find a huge bunch of grapes as a gift to Jupiter. He faced south and bisected the sky with the *cardo* and *decumanus* lines, and then consulted the auspicious and inauspicious bird signs.³ But most important of all is his

deorum sede cum in meridiem spectes ad sinistra sunt partes mundi exorientes, ad dexteram occidentes; factum arbitror et sinistra meliora auspicia, quam dextera esse existimentur.' Idem fere sentiunt Sennius Capito et Cincius.

The etymology of left-hand omen as *id quod sinat fieri* is an attempt to account for the favorable meaning of *sinister*. The opening words of the quotation from Varro are important mainly because they have been most amusingly misunderstood and made the main basis for a theory that the Etruscan and Roman gods had an Olympus in the north. I expect to refute this in a special paper, and will merely say here that the passage describes nothing but the *spectio* or taking of the auspices in the *auguraculum* or consecrated area, and that the *sedes deorum* simply means the place where the seated magistrate performs the ceremony.

¹ Festus (p. 220 ap. Paulum), s. v. *Posticum*: Ea caeli pars quae sole illustratur ad meridiem antica nominatur, quae ad septentrionem postica; rursumque dividuntur in duas partes, orientem et occidentem. Cf. Cicero, *De div.* I, 22, 45: Ea caeli pars quae sole illustratur ad meridiem antica nominatur, quae ad septentrionem postica.

² Cicero states the lucky left as the augural law in *Fam.* VI, 6, 7: *Non igitur ex alitis involatu nec e cantu sinistro oscinis, ut in nostra disciplina est, auguror.* The appointment of a dictator is confirmed by a left-hand bird omen: *Leg.* III 3, 9: *Isque ave sinistra [dictator] dictus, populi magister esto.* In *Div.* IV 47, he quotes a poem in which thunder on the left was a lucky omen. Cf. *Div.* II, 35, 74.

³ *De Div.* I, 17, 31: Multis annis post Romulum Prisco regnante Tarquinio quis veterum scriptorum non loquitur quae sit ab Atto Navio per lituum regionum [i.e. urbis Romae] facta descriptio? Qui cum propter paupertatem sues puer pasceret, una ex iis amissa vovisse dicitur, si recuperasset, uvam se deo daturum, quae maxima esset in vinea; itaque suae inventa ad meridiem spectans in vinea media dicitur constitisse, cumque in quattuor partis vineam divisisset trisque partis aves abdixissent, quarta parte, quae erat reliqua, in regiones distributa miracula magnitudine uvam, ut scriptum videmus, invenit.

discussion of the inconsistent and contradictory schemes of divination to which I have already referred.¹ He puts in juxtaposition a passage from the early Roman poet Ennius, who speaks of left-hand thunder as fortunate, with one from Homer who, in *Il. XII*, 239, describes right-hand thunder as lucky, and in this connection speaks of the general fact that the two nations held opposite theories, the Romans believing in the lucky left while the Greeks and barbarians believed in the lucky right. To such an extent did the Romans associate *sinister* with luck that they called all lucky omens *sinister*, even when they happened on the person's right side. This extension of the meaning of *sinister* is referred to by Festus on the authority of Ateius Capito who says that a sinister omen means a happy and fortunate omen.²

Ennius can be quoted not only, as Cicero does, for lucky thunder and lightning:

Tum tonuit laevom bene tempestate serena (III, 459)

but also for lucky bird omens:

At Romulus pulcher in alto

Quaerit Aventino laevom genus altivolantum (Fr. 52, v. 78)

Et simul ex alto longae pulcherrima praepes

Laeva volavit avis, simul aurens exoritur Sol (Fr. 52, v. 89)

Of particular importance is the famous scene in Livy (I, 18) describing the sanctioning by the gods of the selection of Numa as king. The ceremony took place in the augural area on the top of

¹ *De Div.* II, 39: Quae autem est inter augures conveniens et coniuncta constantia? Ad nostri augurii consuetudinem dixit Ennius: Tum tonuit laevom bene tempestate serena (459). At Homericus Ajax apud Achillem etc. . . . Ita nobis sinistra videntur, Graiis et barbaris dextra meliora: quamvis haud ignoro quae bona sint sinistra nos dicere etiam si dextra sint; sed certe nostri sinistrum nominaverunt externique dextrum, quia plerumque id melius videbatur. Haec quanta dissensio est!

² Festus, p. 351: *Sinistrum in auspicando significare ait Ateius Capito laetum et prosperum auspicium*. It should be noted in this connection that Servius practically says the same in his note to Aen. II, 693: "*Sinistrum a sinendo dictum, quantum ad auguria pertinet, quod nos agere aliquid sinat*". This explanatory etymology had already been given by Festus: see note 5 on p. 189. The attempt of Valeton to take away the orientation meaning of *sinister* in the course of evolution cannot be supported by any proof. Even as late a writer as Arnobius (300 A.D.) keeps up the connection of *sinister* and *laevus* (left) in referring to the gods presiding over divination by thunder and lightning in the sixteen divisions of the heavens, eight on the left and eight on the right: *dii laevi et laevae, sinistrarum regionum praesides et inimici partium dexterarum* (scil. caeli).

the Capitol hill, and either Livy has confused in his narrative two ceremonies,—the seeking of celestial signs and the laying out of a city site,—or else an interpolator has done this for him.¹ Perhaps both explanations are correct. This has resulted in what seems a double orientation: one toward the south for Numa, sitting on the augural bench, and one toward the east for the augur when he marks out the *templum*. But, for any one familiar with the fact that only the magistrate,—in this case Numa,—could direct the auspices, and that the augur could only observe and report, it is evident that the orientation of this ceremony was to the south, because both Livy and Plutarch (*Numa* 7) agree in stating that Numa sat facing south. When Livy describes how the augur marked out the heavenly *templum* we see that he is ignorant of the distinction between the earthly and the heavenly, because instead of the heavenly *templum* with its two intersecting lines forming four sections, we have the description of an earthly *templum* such as Varro gives. Of this part of the text I shall give an entirely new interpretation in connection with the Varronian description.

The elder Pliny (II, 142) makes an important statement which not only supports the southern orientation of the celestial *templum* but asserts that in fulgural divination, in which the Romans depended on the Etruscans, the four original divisions of the heaven were subdivided each into four parts, giving sixteen sections, radiating from the centre, within which the phenomena of thunder and lightning were observed. As was the case with Varro he also explains the belief in the lucky left by this southern orientation:—*Laeva prospera existimantur quoniam laeva parte mundi ortus est. . . . In sexdecim partes caelum in eo spectu divisere Tusci. Prima est a septentrionibus ad aequinoctialem exortum, secunda ad meridiem, tertia ad aequinoctialem occasum, quarta optinet quod reliquum est ab occasu ad septentriones. Has iterum in quaternas divisere partes, ex quibus octo ab exortu sinistras, totidem e contrario appellavere dextras. Ex his maxime*

¹ Liv. I, 18: Accitus, sicut Romulus augurato urbe condenda regnum adeptus est, de se quoque deos consuli iussit; inde ab augure. . . deductus in arcem in lapide ad meridiem versus consedit. Augur ad laevam eius capite velato sedem cepit, dextra manu baculum sine nodo aduncum tenens, quem lituum appellarunt. Inde ubi, prospectu in urbem agrosque capto, deos precatus regiones ab oriente ad occasum determinavit (dextras ad meridiem partes, laevas ad septentrionem esse dixit), signum contra, quoad longissime conspectum oculi ferebant, animo finivit.

dirae quae septentrionem ab occasu attingunt . . . optimum est in exortivas redire partes. Idem cum a prima caeli parte venerunt et in eandem concesserunt, summa felicitas partenditur, etc.

A similar statement had already been made in brief by Cicero (*Div. II, 42*):—*Caelum in sedecim partis dividerunt Etrusci. Facile id quidem fuit quattuor, quas nos habemus duplicare, post idem iterum facere, ut ex eo dicerent, fulmen qua ex parte venisset.* Servius, also, says (*ad Aen. VIII, 427*):—*dicunt physici de sedecim partibus caeli iaci fulmina.*

The ideas connected with this subdivision of the heavens into sixteen compartments and the gods that governed their omens were elaborated in the curious encyclopaedic work of Martianus Capella, a very late writer (V cent. A.D.) who is thought, however, to have cribbed his material from Varro, or Nigidius Figulus, or even from Latin translations of Etruscan works on divination. He gives a chart of the heavens for purposes of divination by thunder and lightning, beginning at the north pole and working from left to right. He pigeon-holes gods and genii in each compartment. What is important for this question is that the chart is based on southern orientation. The four northeast sections are *sinistra postica*; the four southeast are *sinistra antica*; the four southwest are *dextra antica*, and the four northwest are *dextra postica*. The sixteen are grouped in two sections, on the basis of this orientation, and their gods are in two opposite camps, the camp of the left, which is favorable and the camp of the right which is inimical. The feud between the two groups of eight is alluded to by another late writer, Arnobius (*Adv. gentes IV, 5*) who speaks of the *dii laevi et laevae, sinistrarum regionum praesides et inimici partium dexterarum*.

The fact of southern orientation for the heavenly *templum* and the lucky left, and their interdependence being thus solidly established for both Etruria and Rome, a few texts must be discussed which seem to disagree with this view and to give some ground for inquiring whether there was not a school that followed an eastern orientation for the heavenly *templum*.

In the hodge-podge of that early medieval writer, Isidore of Seville (*Orig. XV, 4, 7*) there is a brief description of a *templum* based on eastern orientation: *Locus designatus ad orientem a contemplatione partium dicebatur, cuius partes quatuor erant antica ad ortum, postica ad occasum, sinistra ad septentrionem, dextra ad meridiem spectans. Unde et quando templum construebant, orien-*

tem spectabant aequinoctialem. It is uncertain from what Roman source Isidore drew this statement, which would be correct if it referred to the earthly *templum*.

Servius also infers an eastern *templum* in the sentence (*ad Aen.* II, 693):—*Sinistras autem partes septentrionales esse augurum disciplina consentit, et ideo ex ipsa parte significantiora esse fulmina quoniam altiora et viciniora domicilio Iovis.* Here Jove's northern thunders are described as the more to be noted because there the earth is so much higher and nearer to Jove's domain in the heaven. We know positively from Pliny, Martianus Cappella, and our other sources that for divination by thunder the orientation was *not* to the east.

In Dionysius of Halicarnassus (II, 5, 2) the eastern orientation is posited for augural ceremonies: *καθέδρα μὲν καὶ στάσις ἀρίστη τῶν οἰωνοῖς μαρτυρουμένων ἢ βλέπονσα πρὸς ἀνατολὰς*, and we must not be too severe with him for his explanation, based on Greek and not Roman ideas.¹ We find the same twist in Plutarch's Roman Questions (*Q. R.* 78), where he answers the query: "What is the reason that a bird called *sinister* in sooth-saying is fortunate?"² He suggests King Juba's³ explanation that "to those who look toward the east the north is on the left hand, which some make the right side and upper part of the world." He also says: "Or is it that they think that things terrestrial and mortal stand directly over against heavenly and divine things, and conjecture that the things which to us are on the left hand the gods send down from their right hand." Here again we see the Greek mind struggling against acknowledging the possibility that anything could be lucky because it was on the left.

These few passages merely show two sources of confusion: that due to Greek infiltration, and that due to late inability to follow old traditions.

Terrestrial and aerial Temples.—What was the shape and what the orientation of the terrestrial *templum*? Varro says, as we have seen (p. 189), that this *templum* was limited and bounded

¹ Dionysius explains the preference given to the omens of birds on the left hand by the fact that to a person facing the east the left hand is the north which is a more honorable part of the world than the south. This is, of course, a Greek concept, quite the opposite to Roman and Etruscan ideas.

² *Διὰ τί τῶν οἰωνῶν ὁ καλούμενος ἀριστερος αἰσιος.*

³ *Τὸ βόρειον δὲ δὴ τοῦ κόσμου δεξιὸν ἔνιοι τίθενται καὶ καθυπέρτερον.*

by augury.¹ There could be a *templum* within a *templum*. The whole of a city, such as Rome, was a *templum*; each temple area was a *templum*; the rostra, some basilicas, the curia, were all *templa*. I have shown or stated elsewhere that for this class of *templa* almost any form could be used, and that they can be roughly classified under circles, triangles, and rectangles.

I have written in a previous article in the JOURNAL (XVIII, 1914, pp. 302 ff.) on the circular *templum* and somewhat briefly elsewhere (A. J. Philol. XXXVI, 1915, pp. 314 ff.) of the triangular *templum*. The first thing to be noted in Varro's text is that the boundaries of the *templum* are determined by large trees, denoting an early date for the document or formula cited, the language of which also is archaic and technical. The boundaries are determined not merely by sight (*conspicione*) but by memory or mental vision (*cortumione*). But most important is the fact that a careful reading of Varro's text will show that the *templum* he describes is not, as always supposed, rectangular but triangular. He first fixes a point on his left, marked by a certain tree which is described: he then marks out a corresponding point on his right. Between these points he determines the boundaries in front of him by sight and memory. My suggestion is that the base line of the triangle runs from left to right through the place where the augur stands and that the apex of the triangle is directly in front of him. This interpretation is, I think, confirmed in a most unexpected manner by the description in Livy of the inauguration of Numa which has already been discussed (p. 192). If we leave out the evident gloss in parenthesis it reads: *inde ubi prospectu in urbem agrosque capto, deos precatus regiones ab oriente ad occasum determinavit, signum contra, quoad longissime conspectum oculi ferebant, animo finivit*. The augur's glance is first directed over city and fields, showing that it is the earthly *templum* that is in question. He then marks out the regions by drawing a line from east to west which forms the base of the triangle, and then marks out the limit immediately in front of him as far as his eye could reach into the distance; this being the

¹ L. L. VII, 8: In terris dictum templum locus augurii aut auspicii causa quibusdam conceptis verbis finitus. Concipitur verbis non hisdem usque quaque. In arce sic: templa tescaque me ita sunt quoad ego caste lingua nuncupavero. Olla veter arbos, quirquir est, quam me sentio dixisse, templum tescumque finito in sinistram. Olla veter arbos, quirquir est, quam me sentio dixisse, templum tescumque finito in dextrum. Inter ea conregione conspicio cortumione utique ea rectissime sensi.

apex of the triangle. The augur, in going through this ceremony is not, therefore, obliged to turn around. He keeps seated, facing the south, or the east or the west as the case may be.

It seems curious that when a passage has been submitted to such microscopic examination by so many scholars it should not have occurred to any critic that the form of this *templum* is so clearly triangular that no other explanation is possible. How else can the *signum contra* be explained, between east and west? And as the *signum contra* is actually between east and west it must be that the augur did *not* face east, as he is always said to face, and if not east, then of course south, as Livy says in the preceding sentence that he faced, when he sat down by Numa on the augural seat, the *sedes deorum*.

In a previous paper¹ I discussed another triangular *templum*, that of the *arx* of Iguvium. I there showed that this *templum*, which had hitherto been thought to follow the supposed inevitable rectangular form, is described with great particularity as a triangle whose apex is at the augural seat on the *arx* with a base line running in front of the augur from left to right, from the main altar (left) of the gods to the border line of the *urbs* (right).

According to circumstances, therefore, the augur stood either in the centre of the base line or at the apex of the *templum* triangle.

As for the system of orientation of the earthly *templum*, it was twofold, eastern and western. A large part of our information as to the philosophy back of this form of *templum* is to be found in that mine of technical lore, the handbooks of the Roman civil engineers, called *agrimensores* or *gromatici*, written mainly under the Middle Empire. They give the rules and practise of Roman surveying, which marched hand in hand with the Roman legions across the world. A careful collation of their introductory statements would seem to show: (1) That Roman surveying was based on Etruscan teaching; (2) that the original Etruscan orientation was toward the west and was at first followed quite generally in Roman practice; (3) that, after a time, perhaps owing to a recurrence to antique Latin tradition and to a change in religious ideas, the eastern was substituted for the western orientation.

There was never entirely shaken off a certain subservience of the earthly to the heavenly *templum*, as shown in the surveyor's texts and even in some inscriptions. Lachmann in his notes to Siculus

¹ 'Grabovius—Gradius. Plan and Pomerium of Iguvium.' *A. J. Philol.* XXXVI, 1915, p. 314.

Flaccus (p. 155) speaks of the inscriptions referring to the assigning of land in colonies, *in agris divisis et assignatis*, and calls attention to the expression: *dextra et sinistra decumanum totum, ultra citraue cardinem totum*. The surveyor here is supposed to speak of the *decumanus* line as running the whole length from right to left, and the *cardo* line from front to back. This implies, of course, the southern orientation and also implies that the *decumanus* line was marked as beginning not at the east but at the west end.

One of the best evidences of the existence of the two *templa* is the difference in the way the four quarters of each *templum* are marked out. In the heavenly *templum* the line from south to north is drawn first and that from east to west afterward. In the earthly *templum* it is the east-west line that comes first, and it is this line that must remain intact, not broken when it is intersected by the later drawn south-north line. The east-west line was called *decumanus* and the south-north line *cardo*.

In regard to the relative importance of the two lines, the opinion expressed by Schulten in Pauly-Wissowa (s. v.) is that the *cardo* and not the *decumanus* was originally the principal line. This was also the opinion of Mommsen¹ and Nissen in his *Orientation*.² With due respect for these writers it seems evident that the *cardo* line is the more important in the heavenly *templum* and the *decumanus* in the earthly *templum*, depending, of course, on the different orientations.

The principal Roman surveyors' manuals are prefaced by a sort of philosophic statement of the principles on which their practise is based, and from these prefaces I shall quote what is important for orientation.

Festus, for instance, who has been quoted for the southern orientation of the heavenly *templum*, is equally positive in affirming an eastern-western orientation for the earthly *templum* of the surveyors. He says (p. 234): *Prorsi limites appellantur in agrorum mensura qui directi sunt ad orientem*. He repeats this assertion in another form (p. 233): *Posticam lineam in agris dividendis Servius Sulpicius appellavit ab exoriente sole ad occidentem quae spectat*.

¹ *Hermes*, XXVII, 90.

² Schulten makes *antica*=*citrata*=eastern and *postica*=*ultrata*=western, exactly reversing the real relation, because *citra* is behind and *ultra* is in front of a given point or line.

This western orientation is asserted to be the original orientation in surveying the earth by the most prominent of the Roman writers of special treatises on the subject of surveying. They take pains to state clearly the theory of orientation which they follow.

I first cite Frontinus (p. 27): *Limitum prima origo, sicut Varro descripsit, a disciplina Etrusca; quod aruspices orbem terrarum in duas partes dividerunt, dextram appellaverunt quae septentrioni subiaceret, sinistram quae ad meridianum terrae esset, ab oriente ad occasum, quod eo sol et luna spectarent, sicut quidem architecti delubra in occidentem recte spectare scripserunt.*

Here is the earthly *templum* based on a western orientation. This statement is immediately followed by: *Aruspices altera linea ad septentrionem a meridiano dividerunt terram, et a media ultra antica, citra postica nominaverunt.*

Evidently this second paragraph describes the marking of the *cardo* line, just as the first had described the *decumanus* line. The second part of the sentence shows a southern orientation, because, taking as point of departure the centre of the south-north line, it says that the half of it that was in front was called *ultra* and the half that was behind *citra*. This is confirmed by the following sentence, in which Frontinus explains how these two stages in Etruscan world surveying were used as a basis by the Roman surveyors: *Ab hoc fundamento maiores nostri in agrorum mensura videntur constituisse rationem. Primo duo limites duxerunt; unum ab oriente in occasum quem vocaverunt decumanum; alteram a meridiano ad septentrionem, quem vocaverunt cardinem, decumanus autem dividebat agrum dextra et sinistra, cardo citra et ultra.*

Hyginus, another prominent *agrimensor*, fortunately explains the shifting from the earlier Etruscan western orientation to the later Roman eastern orientation, which he connects, it would seem, with the change in the way temples were made (p. 166): *Inter omnes mensurarum ritus eminentissima traditur limitum constitutio. Est enim illi origo caelestis et perpetua continuatio. Constituti enim limites non sine mundi ratione, quoniam decumani secundum solis decursum diriguntur, kardines a poli axe. Unde primum haec ratio mensurae constituta ab Etruscorum aruspicum disciplina; quod illi orbem terrarum in duas partes secundum solis cursum dividerunt, dextram appellaverunt quae septentrioni subiacebat, sinistram quae ad meridianum spectaret; alteram lineam*

duzerunt a meridiano in septentrionem, et a media ultra antica, citra postica nominaverunt. Ex quo haec constitutio limitibus templorum adscribitur. Ab hoc exemplo antiqui mensuras agrorum normalibus longitudinibus incluserunt, primum duos limites constituerunt, unum, qui ab oriente in occidentem dirigeret, hunc appellaverunt duodecimenum . . . alterum a meridiano ad septentrionem, quem kardinem nominaverunt a mundi kardine . . . reliquos limites fecerunt angustiores, et qui spectabant in orientem prorsos, qui ad meridianum transversos appellaverunt.

After stating in this passage that the Etruscans faced to the west, but the "*antiqui*," evidently Romans, faced eastward and called the lots to the east of the centre the front lots, Hyginus (p. 169) tries to explain this contradictory practise by the change in religious custom from the earlier one of facing temples westward to the more recent one of facing them eastward: *Secundum antiquam consuetudinem limites diriguntur, quare non omnis agrorum mensura in orientem potius quam in occidentem spectat, in orientem sicut aedes sacrae. Nam antiqui architecti in occidentem templa recte spectare scripserunt: postea placuit omnem religionem eo convertere, ex qua parte caeli terra inluminatur. Sic et limites in oriente constituuntur.*

It is supposed that in saying that ancient architects described temples as facing west Hyginus was referring among others to Vitruvius, who says (IV, 5) that those who sacrificed at the altars faced the east and also faced the statues of the gods in the temples, because all altars were made to face the east. Of course the basis for this is an eastern orientation for prayer.

This change from the western to the eastern orientation took place long before the close of the republic, and seems to have been associated with the increased strength of solar cults. It would be idle to speculate at length on the reason for the change. I would merely suggest a possible cause in the altered attitude of the Romans toward the chthonic gods. In early times the major part of Roman worship was concerned with the earth gods. The cults of Terra Mater; of Vediovis, the volcanic subterranean god; of Janus and Vesta, the spirits immanent in the entrance and the hearth of the dwelling-place; of Mars, the spirit of the fruitful field; and of such minor deities as Robigus of the mildew, Consus and Ops of the corn store, of Portunus, Pomona, Flora, and many more, all show that, for weal or woe, the Romans turned their thoughts earthward. Their gods were earth-gods

localized on some part of the earth's surface and representing both the life-giving and destroying powers of nature. Only Jupiter was a sky god. Therefore, the gifts from the gods were not connected, as in the Orient, with an easterly position, toward the sun as giver of life, nor, conversely, was there that association of the west with death that was the corollary in Greece as well as in the East. But, coincident, perhaps, with the popularizing from Greece of the cult of Dis and Persephone, lords of the underworld, and with the transfer of the gods from the earth to the sky, it seems logical to suppose that the Romans began to follow the cult direction of the rest of the world. This took place at some time before the Punic wars.

The legend of the famous Etruscan diviner, Olenus Calenus, as related by Dionysius (IV, 69-71) also shows the eastern orientation in the laying out of the city of Rome, and, in general, in the orientation of the terrestrial *templum*, because when the diviner traces on the ground the image of the *templum* of Rome with a circular outline which two lines at right angles bisect into four equal parts, he starts tracing these lines at the east end toward which he faces.¹ This is a hitherto unnoted fact, I believe.

Coincident with the shifting from west to east in Roman orientation it is likely that the western orientation was reserved for ceremonies relating to the dead (as in Greece) and to the gods of the underworld. We know, for example, that the sacrifices to Dis and Persephone took place at the *Tarentum*, in the Campus Martius, outside of the *pomoerium*, and that the *Tarentum*, with its underground altar, was on the right hand and on the west side of the magistrate presiding at an augural function on the *arx* of the Capitol.

It remains to say a few words on two points. The first is in regard to the lucky left, *per se*, as distinct from orientation. It is evident that the idea of luck passed at a very early date from association with points of the compass to association with the sides of the human body, even when they were not in a ritual position. That occurs with all races. It is interesting to note that with the early Romans, as shown in the archaic tombs in the Forum, as well as in Italic and Etruscan burials, the association passed into dress. The attaching of the mantle on the left shoulder, which is the rule, is certainly symbolic and contrasts with the opposite Greek custom.

¹ See my paper on the circular *templum* in *A. J. A.* XVIII, 1914, p. 312.

The second point is that of the gradual change in Roman custom through Greek influence, until the lucky left remained a belief only in the sphere of religious tradition and divination ceremonial. This change filtered down to the people from the cultured and literary *élite*. It got so complete a control over literature under the empire that in a recent doctor's dissertation an excellent case is made out for the lucky right as the Roman rule.¹ However, I expect in another paper to show how works of art present quite another aspect. Art was almost always more conservative and more national than literature. From the temple of Jupiter Capitolinus where Juno occupies the place of honor on the left hand of Jupiter, and Minerva the less honorable place on his right,—a fact consecrated in the cult statues of the gods reproduced on many coins,—to the war panoramas on the columns of Trajan and Marcus Aurelius, there is the consistent use of the honorable left. More extraordinary yet, the tradition survived in the Christian art of Rome almost to the end of the Middle Ages. We can distinguish a Latin from a Byzantine mosaic or fresco by noting that Peter is given the place of honor on the *left* side of Christ, whereas a Byzantine artist places him on the right. This Roman custom lasted until the time of the great Cavallini, master of Giotto.²

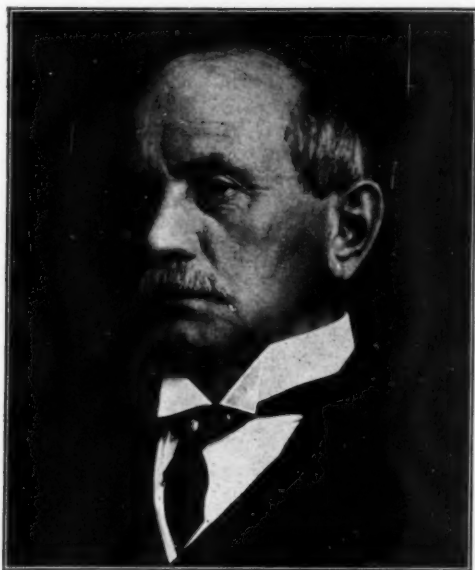
I have always been tempted to attribute to this tenacious persistence of old traditions among the people the peculiar Roman custom of driving to the left instead of to the right through the streets of Rome—a custom undoubtedly connected with luck.

A. L. FROTHINGHAM.

PRINCETON, April, 1917.

¹ A. P. Wagener, *Popular Associations of Right and Left in Roman Literature* (Dissert., Johns Hopkins Univ., 1910-1912).

² See my paper read before the last International Congress of the History of Art in Rome (1913): *Di un metodo per distinguere opere Bizantine dalle Italo-Bizantine*.



John Williams White

The news of the sudden death, on May 9, 1917, at Cambridge, Massachusetts, of Professor John Williams White brought a keen sense of loss to many a classical scholar, and came as a painful shock to those who had known him at all intimately.

Professor White was born in Cincinnati, March 5, 1849, and was thus entering upon his sixty-ninth year at the time of his death. In 1868 he received his bachelor's degree from Ohio Wesleyan University, and in 1871 his master's degree from the same institution. After that he was in Germany for a time, and in 1874 was appointed Tutor in Greek at Harvard. In 1877 he received the degrees of A.M. and Ph.D. from Harvard, and in the same year became an Assistant Professor there. In 1884 he was

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promoted to a Professorship of Greek, and this he held until 1909. In 1911 he was made Professor Emeritus, and in 1913 Harvard conferred upon him the degree of Litt. D. In the course of his career Professor White also received various honorary degrees from other institutions in this country, and in England, in 1900, the degree of Litt. D. from the University of Cambridge. From 1881-1886 he was Chairman of the Managing Committee of the American School at Athens, and in 1893-1894 held the Annual Professorship at the School. He was President of the Archaeological Institute from 1897 to 1903. Both in this country and abroad he was a member of various learned societies.

As teacher and scholar, Professor White fully deserved the high reputation which he won. As a teacher, both by his work in the class-room and by the publication of text-books, his influence on the study of Greek was far-reaching, and for the admirable "College Series of Greek Authors," which he and Professor Seymour edited, American teachers will long owe him a debt of gratitude. His influence was also widely spread by the publication in 1878 of his *Introduction to the Rhythmic and Metric of the Classical Languages*, a translation and adaptation of the *Leitfaden* of Dr J. H. H. Schmidt. In later years, to be sure, he rejected much of Schmidt's theories, but for all that the *Introduction* brought to many a teacher his first real insight into the problems of Greek metrical structure, and enabled him to put before his students a workable theory. The influence of this book in England also may be seen in the introduction to Jebb's *Oedipus Tyrannus*.

During the earlier years of his teaching, Professor White devoted himself chiefly to undergraduate work, and few who have attended his courses will forget the atmosphere of vigor which pervaded the class-room, and the lucid character of his interpretations. It would be difficult to conceive of better teaching, for example, than was to be found in his course in Thucydides with its skillful combination of lecture and recitation. Anything which could give the student a vivid sense of the reality of Ancient Greece was grist to his mill, and out of this desire to create a living impression of ancient conditions grew his valuable courses in Greek life, which attracted many who were not special students of the classics. With this same desire he was the moving spirit in the brilliant performance of the *Oedipus Tyrannus* at Harvard in 1881. His untiring work for the organization of the

American School at Athens was inspired by this vivid sense of the reality of Ancient Greece, and he and Professor Norton are rightly regarded as the founders of the School.

As Professor White approached middle life, he felt strongly that his plans for scholarly achievement had been held in check by his almost exclusive devotion to undergraduate teaching, and by the many calls for committee work to which his unusual organizing ability had laid him open. He therefore gave up his undergraduate courses and devoted himself to graduate instruction and scholarly activity. The graduate work was original in form and highly successful, and his courses in Demosthenes and Aristophanes formed a very valuable addition to the higher instruction in Harvard University. In these courses it was that Professor White's great ability to direct the work of students was shown in most marked degree. The author was considered as a whole, and the students took up their study of him from different points of view.

It was especially in connection with Aristophanes that Professor White showed the remarkable growth of his own scholarship, and this in spite of the struggle against ill health which came to him in his later years. One may truly say in the words of the old epigram that "in seeking to win a sanctuary that will not fail, he found the soul of Aristophanes." In 1912 he published the noteworthy volume on *The Verse of Greek Comedy*, and in 1914 *The Scholia on the Aves*. These books must always hold a very high place among American contributions to classical scholarship. The masterly essay which forms the introduction to the latter work makes it only too clear how great is the loss that has prevented the completion of the extensive edition of Aristophanes which Professor White had planned. To American scholarship he has bequeathed a record of solid accomplishment, to his pupils the memory of a remarkably vigorous, awakening, and friendly teacher, and to all who knew him the example of a continuing growth, which age but served to strengthen, both in scholarship and in character.

ἡ χρηστός ἀνὴρ πολί-
ταις ἐστὶν ἀπασιν ὅσ-
τις γ' ἐστὶ τοιοῦτος.

J. R. W.

ARCHAEOLOGICAL DISCUSSIONS¹

SUMMARIES OF ORIGINAL ARTICLES CHIEFLY IN CURRENT PUBLICATIONS

WILLIAM N. BATES, *Editor*

220, St. Mark's Square, Philadelphia, Pa.

GENERAL AND MISCELLANEOUS

Archaeological Discoveries in 1915.—In *Cl. J.* XII, 1916, pp. 200-208, G. H. CHASE gives a report of archaeological discoveries in the Greek and Roman fields in 1915.

The Labyrinth.—In *R. Arch.*, fifth series, III, 1916, pp. 387-398, the treatise on the Labyrinth, by R. DE LAUNAY, is continued (see *A.J.A.* XX, 1916, p. 492). A Pompeian painting and a Corinthian coin exhibit a building similar to the tholos at Epidaurus. The tholos at Epidaurus is, as are other similar structures, essentially an odeum. The Apolline nature of Asclepius is emphasized. The unit of measure of the labyrinth at Tiryns is the span of Gudea in Babylonia. Measures at Paestum and Assos are compared. The diameters of the tholos at Tiryns and that at Epidaurus are identical. *Ibid.* IV, pp. 119-128, mediaeval labyrinths and representations of labyrinths are briefly discussed. They are limited chiefly or entirely to regions in which Germanic peoples predominate, and they enter into Romanesque art as a continuation of the ancient northern tradition. *Ibid.* pp. 286-294, the treatise is continued. From northern Europe the "Aryan" race descended to the Mediterranean at the west and then passed eastward by sea. Other branches of the same race passed by land across the plains of Russia and through the valleys of the Vistula and the Dnieper to the Balkan peninsula and Asia. The earliest Peloponnesian (Tiryns) and Asian (Lycia) stations and the Cretan civilization seem to belong to those who came by sea. Those who moved by land founded the city of Troy and advanced as far as Mesopotamia. Lydo-Carian groups built the fabulous palaces at Cnossus and Phaestus, introducing an Asiatic plan, the cult of the bull, the Minotaur, and the double axe. Here the two streams met. The Zeus of Labranda was originally a rain-god. When he adopted from Babylonia the axe as his attribute, he kept his name (*λαβρότατος*), and the name of the axe (*πίλεκυς*) was assimilated to his. Then in Crete the cult of the axe absorbed that of the labyrinth. *Ibid.* pp. 413-421, the treatise is concluded.

¹ The departments of Archaeological News and Discussions and of Bibliography of Archaeological Books are conducted by Professor BATES, Editor-in-charge, assisted by Professor C. N. BROWN, Miss MARY H. BUCKINGHAM, Dr. T. A. BUENGER, Mr. L. D. CASKEY, Professor HAROLD R. HASTINGS, Professor ELMER T. MERRILL, Professor LEWIS B. PATON, Professor A. S. PEASE, Professor S. B. PLATNER, Professor JOHN C. ROLFE, Dr. JOHN SHAPLEY, Professor A. L. WHEELER, and the Editors, especially Professor MARQUAND.

No attempt is made to include in this number of the JOURNAL material published after December 31, 1916.

For an explanation of the abbreviations, see pp. 115-116.

The Pelopidae succeeded the kindred Minoans, to be followed by the Dorians. Akin to the Dorians (*i.e.*, Aryan) were the Celts, who migrated from Asia as far as Scotland. Aryan and Mediterranean symbols are intermingled. The labyrinths of the Middle Ages are, like those of antiquity, the offspring of the Aryan spirit.

Religious Symbolism.—In *R. Hist. Rel.* LXX, 1914, pp. 43-60 (2 figs.), W. DEONNA discusses several monuments which he thinks may be traced back to the oriental type of the sacred tree. Among these are (1) the mitra in the museum at Heracleon, Crete, the upper part of which he explains as a conventionalized bird resting on the sacred tree; (2) an ivory statuette, found at the temple of Artemis at Ephesus, with a stalk surmounted by a hawk rising from the head, also symbolizing the solar bird on the sacred tree; (3) the dancers on the column at Delphi go back to the same source; so too (4) the funeral monuments of the sixth century supporting a Siren or a Sphinx. Life, fertility and immortality are symbolized by a human figure on a column. The columns of Hierapolis upon which a man mounted and remained for seven days had a similar significance. *Ibid.* pp. 125-150 he argues (5) that the representation of the Devil as a triple-headed monster in a French miniature of the fifteenth century goes back to an ancient original; also (6) that the jaws of the three serpents on the Serpent Column at Constantinople were purposely broken because of a belief in their magic powers; and that (7) the two figures lying side by side with the head of one by the feet of the other cut on a block of stone at Laussel and dating from palaeolithic times are intended to represent one person. The two heads and two bodies give greater power to the image, which is prophylactic. The position is due to a desire on the part of the artist to have his figure right side up from whichever side it was seen.

Three Solar Dots.—In *R. Ét. Gr.* XXIX, 1916, pp. 1-10 (6 figs.), W. DEONNA calls attention to three dots placed so as to form a triangle found on certain Italic vases. These dots with some modifications appear upon vases and other antiquities from various parts of the ancient world dating chiefly from the period of La Tène, although one example from Rebières (Dordogne) goes back to the Mousterian age. Sometimes three disks or rosettes are placed in a row as in Aegean art, and these have the same significance, that is, they symbolize the three chief periods in the daily course of the sun.

Thracian Archaeology.—In *R. Arch.*, fifth series, III, 1916, pp. 359-386, GEORGES SEURE continues his discussion of unknown or little known Thracian inscriptions (see *A. J. A.* XX, 1916, p. 214). No. 148 is a late Greek epitaph in Sofia. Nos. 149 and 150, Latin epitaphs, are from Lajene, in the province of Lovetch. Here a bath and a large mausoleum have been discovered. In the mausoleum were fragments of three sculptured sarcophagi, probably made for Romans or Romanized Greeks by sculptors from Asia Minor. No. 149 is very fragmentary. No. 150 is a somewhat fragmentary metrical epitaph of sixteen lines; it contains numerous errors of grammar and prosody.

Inscriptions in Lubenau's Diary.—The Diary of Reinhold Lubenau, a citizen of Königsberg, in which he describes his travels in Mediterranean lands in 1573-1589, has been published in the *Mitteilungen aus der Stadtbibliothek zu Königsberg*, and the part relating to inscriptions is reviewed by MENTZ in *Arch. Anz.* 1916, cols. 49-56. No information of epigraphical value can be gathered from the work, because the author so often used compilations, second-

hand versions of Appian (1495-1552), etc., instead of his own observation, as is shown by the borrowed misreadings, false ascriptions of locality, and other errors in his statements.

Antiquities found in Cambodia.—In *R. Arch.*, fifth series, IV, 1916, pp. 129-139 (3 figs.), GEORGE GROSLIER describes and discusses various objects of metal and pottery which he found in Cambodia. These differ in form and material from objects now in use, but many of them are reproduced in the reliefs of the temples at Banteai Chma, Bayon, and Angkor Vat. The objects in question are bronze balances, pins, rings, and receptacles, and terracotta vases, pots, and tiles.

Jade in Chinese Rites.—In *R. Arch.*, fifth series, IV, 1916, pp. 61-118 (15 figs.), G. GIESELER gives an account of the use of jade in the cult and funerary rites of China under the Tchu and Han dynasties. After a brief introduction he discusses at some length the sacrifice to the Sky and the Emperor above, then the sacrifice to the Five Sovereigns, and finally the funerary rites. The article is replete with statements of fact, systematically presented.

An Italo-Celtic Empire.—In *R. Ét. Anc.* XVIII, 1916, pp. 263-276, C. JULLIAN argues that there was in antiquity a great Italo-Celtic empire in western Europe in which a common language was spoken. The people who composed it were referred to by Greek and Latin writers as Ligurians. He thinks that the name Hyperboreans was applied by the Greeks first to a related people and then to the Ligurians themselves.

The Runes and the Alphabet of Ulfilas.—In *S. Bibl. Arch.* XXXVIII, 1916, pp. 158-168, E. J. PILCHER maintains that the runes are merely a development of the Moeso-Gothic alphabet of Ulfilas. The peculiar appearance of the runes is due to their being habitually scratched across the grain of wooden boards. The letters of Ulfilas executed in the same way would speedily assume the peculiar angular form of the runic characters. Ulfilas, being a Greek, naturally took the Greek uncial alphabet as his basis, and eked it out by the introduction of Latin uncial letters of his period. The runic monuments of England are not earlier than the seventh century, and few of the monuments of Scandinavia are older than the sixth or the seventh century, so that archaeology offers no obstacle to the view that the runic writing was merely a development of the fourth century Gothic alphabet of Ulfilas.

Catalogue of the Inaugural Exhibition of the Cleveland Museum of Art.—In connexion with the opening of the Cleveland Museum of Art an exhibition was held, and an illustrated catalogue published. After the introductory matter, the objects exhibited are described in eighteen sections, each with a brief introduction:—Classic Art; Colonial Art; Gothic Art; Renaissance Art; Holden Collection of Italian Paintings; Painters, Dutch and Spanish; Painters, French; Painters, English; Painters, American, XIX century; Painters, American, contemporary; Freer Collection, lent by the Smithsonian Institution; W. S. and J. T. Spaulding Collection of Japanese Prints; The Art of the Nearer East; Chinese Art; Japanese Art; Ancient Egyptian Art; Tapestries and Armor; Garden Court (chiefly Mediaeval and Renaissance sculpture). In nearly all sections much of the material collected was lent for the occasion. The Holden Collection, originally formed by James Jackson Jarves, was bought in 1884 by the late Liberty E. Holden. It contains no great masterpieces, but consists of good and characteristic examples of Italian painting,

chiefly of the fifteenth and sixteenth centuries. Eight fine tapestries, representing the story of Aeneas and Dido, are from designs by Giovanni Francesco Romanelli (ca. 1612-1662). The collection of armor, bought from Frank Gair Macomber, consists chiefly of fine examples of the work of the sixteenth century, though some pieces are earlier and some later. This collection and the eight tapestries are gifts to the Museum. Among other permanent possessions of the Museum, apart from works of modern art, are interesting Gothic sculptures, a remarkable collection of fans and snuffboxes, and many examples of the minor industrial arts of all ages. The book is valuable as a record of the objects available for exhibition in the summer of 1916 and as a list of the possessions of the Museum when it was first opened. [*The Cleveland Museum of Art, Catalogue of the Inaugural Exhibition, June 6-September 20, 1916.* Cleveland, 1916, published by the Museum. xiv, 360 pp.; 166 pls. 4 to.]

EGYPT

Excavations at Tell el-Amarna.—The report by LUDWIG BORCHARDT of the excavations at Tell el-Amarna in 1913-1914 (*Mitteilungen der Deutschen Orient-Gesellschaft*, No. 55, December, 1914, pp. 1-45) is given in an English translation in the *Annual Report of the Smithsonian Institution* for 1915, pp. 445-457 (13 pls.).

The Stele of Intef.—In *Ann. Arch. Anth.* VII, 1916, pp. 81-88 (pl.), T. E. PEET translates and comments on the stele of Intef, son of Myt, now in the British Museum. The inscription dates from the time of Nebhepetra of the eleventh dynasty, and contains copies of the contracts for offerings to be made and ceremonies to be performed at his tomb.

An Obscure Hieroglyph in the Decrees of Coptos.—In *C. R. Acad. Insc.* 1916, pp. 140-148, A. MORET discusses a hitherto obscure sign, sometimes interpreted as "agent" or "dependent," on the monuments of Coptos. He shows that it has the value *hm*, and he translates the passages where it occurs "artisan" or "artisan potter."

The Dress of the Ancient Egyptians.—In *B. Metr. Mus.* XI, 1916, pp. 166-171 (9 figs.), B. M. C. describes the costume worn by men and women in Egypt in the Old and Middle Kingdoms and the changes they underwent. *Ibid.* pp. 211-214 (8 figs.) he describes in similar fashion the dress of the Empire. *Ibid.* pp. 238-242 (7 figs.) he discusses the various types of kerchief worn by men and women. Three specimens made of fine linen were presented to the Museum in 1909. They came from the Valley of the Kings and date from about 1350 B.C. The pattern of the *khat* and of the *nemes* is described.

The Worship of the Crocodile in Roman Egypt.—The worship of the crocodile god Sobk, or in Greek Σοῦχος, was very popular in the Fayum in imperial Roman times. He was known by various names, such as Soknopaios, Sokonokoneus, Soknebtynis, Petesouchos, Pnepheros, etc., in different parts of the district. Many inscriptions and papyrus fragments with references to the cult have been found. In 1895-96 a sanctuary of the god was excavated at Kom Ushim (Karanis), and others have been identified at Theadelphia and Oum el-atl, and with considerable probability also at Dionysias and Euhemeria. Various documents brought to light prove that in the Fayum the crocodile was worshipped as the god himself, and not as Wilcken thought, as the living

embodiment of the god. This cult was tolerated, if not encouraged, by the Roman emperors. (J. TOUTAIN, *R. Hist. Rel.* LXXI, 1915, pp. 171-194.)

The Cult of Apis in Roman Times.—In *Muséon*, third series, I, 1916, pp. 193-202, J. TOUTAIN shows that the cult of Apis continued to exist in Egypt down to the time of Theodosius. The Romans did not object to the cult, but even encouraged it. The god always appeared as a bull, and the same methods were employed to discover the Apis as in early times. Sometimes the figure of the Apis bull appears on coins together with the head of the emperor.

The Cost of Living in Roman Egypt.—The cost of living in Roman Egypt, as shown by the evidence of papyri, is discussed by L. C. WEST (*Cl. Phil.* XI, 1916, pp. 293-314) with elaborate tables of wages and prices of commodities at different dates.

The Great Inscription of Meroe.—In *Ann. Arch. Anth.* VII, 1916, pp. 67-80, A. H. SAYCE publishes with a commentary a tentative translation of the great Ethiopian inscription discovered by Professor Garstang at Meroe.

BABYLONIA, ASSYRIA AND PERSIA

Older and Later Elements in the Code of Hammurapi.—In *J.A.O.S.* XXXVI, 1916, pp. 1-33, M. JASTROW, Jr., shows by a comparison with the so-called Sumerian Family Laws and by a study of the internal characteristics of the code that the Code of Hammurapi is the result of a similiar process of development to that seen in the Pentateuch, namely, a substratum of primitive legislation is amplified (a) through further specifications to provide for new cases that arise and (b) through amplifications of all kinds, representing in many cases answers to questions raised, in others an interpretation of an older law in a manner to adapt it to later circumstances.

The So-called Epic of Paradise.—In *J.A.O.S.* XXXVI, 1916, pp. 90-114, J. D. PRINCE argues that the document published by S. H. Langdon in *Publications of the Babylonian Section*, University of Pennsylvania Museum Vol. X, No. 1, and entitled by him *The Sumerian Epic of Paradise, Flood, and Fall of Man*, shows no evidence of being what Dr. Langdon claims. The description of conditions therein does not refer to a happy and blissful country, but rather to a district which had been decimated and practically destroyed by drought. We have here a product of the Ea-cult, possibly drawn from various sources. The compiler has taken the annual drought and its subsequent relief by the annual floods as a *staffage*, around which to build a special adoration of Ea, with the lesson that the flood must be controlled by a gardener who appears here as a special person, possibly semi-divine, working under the direction of Nintu, the mother of the land, but always with the consent of Ea. *Ibid.* XXXVI, 1916, pp. 122-135, (also *R. Arch.*, fifth series, IV, 1916, pp. 358-372) M. JASTROW, Jr., discusses the same document, coming to the conclusion that the text is an incantation, incidental to which Sumerian myths are introduced which set forth the Sumerian view of the beginning of things, but there is no description of Paradise in this text, nor any reference to a Flood, nor does it touch in any way on such a problem as the Fall of Man. The tablet deals with a description of a time before the world was populated, and presents in the form of a number of myths a picture of vegetation and fertility arising, first from the copulation of the god Enki and his con-

sort, who is represented at the same time as his daughter; and second from the inundation of the fields.

The Lost Antiquities from Khorsabad.—In *C. R. Acad. Insc.* 1916, pp. 224–240, M. PILLET announces that repeated searches have at last found the notebooks of Victor Place in the Archives Nationales. In 1851 Place took up the work of excavation at Khorsabad begun by Botta, and in four years collected 235 cases of antiquities for removal to France. During their transportation the boats carrying them were repeatedly plundered by the Arabs and finally sunk in the Tigris, so that twenty-six cases only reached the Louvre. Among the things lost were reliefs from Nimroud and Koycundjick presented by Rawlinson.

Chronology of the Neo-Babylonian Empire.—In *S. Bibl. Arch.* XXXVIII, 1916, pp. 146–148, C. H. W. JOHNS discusses the inscription found by H. Pognon in 1907 at Eski-Harrân in Mesopotamia, in which the mother of King Nabonidus narrates that she had lived from the time of Ashurbanipal to the ninth year of her son Nabonidus, and that she was still hale and hearty at the age of 104 years. This total agrees with the lengths of the reigns of the kings of Assyria and Babylon as recorded elsewhere. The lengths of the reigns of the kings of Babylon as given in the Ptolemaic Canon are also confirmed by the dated tablets. The intervals between the reigns appear to be very short. But though no dates are yet known which contradict the Canon, we may wonder whether there may not be some years omitted. One small hint may help us. Nabonidus says that he restored the temple of the Sun-god at Sippara 45 years after Nebuchadrezzar had done the like. Now Nabonidus must have done this before the third year of his reign, and consequently Nebuchadrezzar must have done his work in 597 B.C.

The Last Years of the Assyrian Monarchy.—In *S. Bibl. Arch.* XXXVIII, 1916, pp. 119–128, C. H. W. JOHNS, shows how the information in regard to the chronology of the last Assyrian kings derived from the Babylonian List of Kings and the Ptolemaic Canon may be supplemented from the business documents of the period. There are a great many documents dated in the reigns of Shamash-shum-ukin, Kandalanu, and Nabopolassar, and these mention a great many persons. It should be possible to decide from these mentions whether these three kings succeeded one another without a gap. As a matter of fact, there is a complete change in the personnel of Babylon, Sippara, Borsippa, and Dilbat between the reigns of Kandalanu and Nabopolassar. This seems scarcely conceivable if no long interval separated the reigns.

Hoard of Persian Sigloi.—In *Num. Chron.* 1916, pp. 1–12 (pl.), J. G. MILNE in discussing a hoard of fifty-two Persian silver sigloi, reported to have been found in Ionia, points out that the symbols and punch-marks indicate a mint at Sardes instead of in the eastern part of the empire, as had previously been supposed.

SYRIA AND PALESTINE

The Religion of Canaan.—In *J. Bibl. Lit.* XXXV, 1916, pp. 1–133, W. C. WOOD gives an elaborate account of the religion of the Canaanites before the Hebrew Conquest as disclosed by archaeological research and by survivals in later religion. He discusses the religion of the pre-Semitic population and of the Semitic Amorites under the main heads of Sacred Waters, Sacred Trees,

Sacred Mountains, Altars, Sanctuaries, Religious Rites, Holy Persons, Feasts, Pantheon, and the Conception of the Future Life.

ASIA MINOR

Inscriptions from Sinope.—In *R. Arch.*, fifth series, III, 1916, pp. 329-358, THÉODORE REINACH publishes ten inscriptions from Sinope, seven of which appear to be new, except as they were first published in 1913 in a local periodical entitled *Πόντος*, the organ of a local scientific and philological society. The inscriptions are all of Roman times. One is in Latin, one is bilingual (Greek and Latin), the others are in Greek. The Greek contains Latinisms and the Latin Hellenisms. Five are epitaphs, five honorary inscriptions. Two are metrical. One (No. 10), in honor of Meioupos (?) Marcianus Rufus, a boxer, gives a long list of his victories. Some new information is given in these inscriptions concerning the priesthoods and magistracies of Sinope.

GREECE

ARCHITECTURE

The Origin of the Corinthian Capital.—In *R. Arch.*, fifth series, IV, 1916, pp. 17-50 (23 figs.), THÉOPHILE HOMOLLE discusses the origin of the Corinthian capital. He shows by means of the drawings on lecythi that grave stones were decorated with real acanthus leaves, sometimes placed at the foot of the stele, sometimes fastened near its top. It is from such use of the real acanthus that he derives the capital. The legend given by Vitruvius (IV, i, 19) retains the connection of the Corinthian capital with the cult of the dead, and it is quite possible that Callimachus was the first to use the new capital in architecture. He was especially a worker in metal, and probably the first Corinthian capitals were wrought in bronze. That would also furnish a reason for calling them Corinthian. There is no reason to suppose that the new capital was invented, or first used, at Corinth.

SCULPTURE

Cypriote Statuettes.—In *Mon. Piot*, XXI, 1913, pp. 5-11 (pl.; 3 figs.), R. DUSSAUD discusses three stone statuettes from Cyprus in the Louvre. One is a nude Heracles with both arms gone, also the right leg at the knee and the left at the thigh. He was standing and engaged in a combat with the lion, part of which is preserved. A second statuette of similar style also represents a standing Heracles. The arms are gone and the feet from above the ankles. The third, which represents a standing female figure is well preserved though somewhat weathered. The right hand is missing. The figure has an elaborate costume, wears two or three necklaces, and a high headdress not unlike the crown of the Tyche of Eutychides. The three statuettes probably came from the same workshop and are among the best from Cyprus dating from the fifth century B.C.

A Torso at Buda-Pesth.—A beautiful marble torso of an athlete, which was found in the Roman Baths at Saint-Colombe-les-Vienues in France and is now at Buda-Pesth, is discussed by A. HEKLER in *Jb. Arch. I.* XXXI, 1916, pp. 95-

104 (pl.; 14 figs.). By a comparison with similar figures on vases or reliefs, and in the round; the nearest of which is a bronze statuette in New York, it is shown that the youth was represented as standing with knees and body partly bent and arms extended stiffly downward and forward, in an attitude preparatory to taking a spring. The work is Attic in style, with Ionian tendencies, belonging to the circle of influence of Critias and Nesiotes, and is to be dated about 460 B.C.

Apollo Lyceus.—In *B. Com. Rom.* XLIII, 1915, pp. 73-98 (2 pls.), L. CESANO argues that Lucian (*Anach. vel Gymn.* 7 f.) saw a late marble copy of a bronze statue of Apollo Lyceus, which was an early work of Praxiteles.

In restoring this bronze the tree which Lucian mentions must be removed. This hypothesis is supported by coins and the so-called Ephebus of Sutri (*Not. Scav.* 1912, pp. 373 ff.).

The Venus of Arles.—

In *Mon. Piot*, XXI, 1913, pp. 13-45 (pl.; 4 figs.), É. MICHON discusses the early history of the Venus of Arles, and points out that it was in several pieces when found. The head was found separately, so that its exact position on the body cannot now be determined. The statue was restored by Girardon and the two arms added. An early cast shows on the right side a support to which the right arm must have been attached. The restoration, therefore, cannot be correct here. In addition to removing this support Girardon reduced the size of the breasts and the folds of the drapery.



FIGURE 1.—ALEXANDER WITH THE AEGIS.

A Portrait of Hyperides.—In *Mon. Piot*, XXI, 1913, pp. 47-58 (pl.; 4 figs.), F. POULSEN identifies a bearded head in the Ny Carlsberg Museum at Copenhagen as a portrait of Hyperides. It originally formed part of a double herm. Four other copies are known, one of which in Rome has been wrongly called

a Lysias; another at Compiègne in the form of a double herm has a badly broken female head at the back. The way in which the hair of this head is dressed points to the middle of the fourth century B.C. as the date of the herm; the style is that of Praxiteles. The face, therefore, must have been a portrait of Phryne, and the head on the other side that of Hyperides.

Alexander with the Aegis.—In *Mon. Piot*, XXI, 1913, pp. 59-72 (2 pls.; 7 figs.), P. PERDRIZET publishes a headless statue in the Louvre representing a new archaeological type, namely Alexander with the aegis. Six replicas are known, all of them probably found in Egypt. The best preserved is a bronze statuette in the collection of Dr. Fouquet in Cairo (Fig. 1). The figure wears the aegis which extends to his knees. His right hand which is raised above his head probably grasped a lance which served as a support, while in his left hand he held a small figure of Victory. The aegis seems to have been suggested by the story that Alexander was the son of Zeus. The writer thinks that the statuettes may have been dedicated to the god Alexander by Macedonian soldiers.

Gauls in Hellenistic Art.—The death of Brennus and other stories of the Gallic invasion of Greece strongly impressed the Hellenistic Greeks and influenced their art. In *Mon. Piot*, XXI, 1913, pp. 173-202 (pl.; 15 figs.), A. REINACH calls attention to several monuments illustrating this fact. The best of them is a statuette of a wounded Gaul trying to rise from the ground, in the museum at Naples (*Guida*, p. 367, No. 1607). It was found at Pompeii, but has not been published. Other sculptures are the Gaul in Venice, a bronze statuette in Dresden and another in Munich, and a fragment in New York. A fresco in the "House of Dionysus" in Delos and a fragmentary heater in Munich, both with scenes of combat between Greeks and Gauls, go back to a painting at Athens commemorating the battle of Lysimachia in 277 B.C. Various reliefs in which Gauls are seen attacked by elephants may be traced back to the same period.

INSCRIPTIONS

The Men of Priene at Charax.—In *R. Ét. Gr.* XXIX, 1916, pp. 29-45, M. HOLLEAUX proposes new restorations for portions of the decree of the Ephesians relating to the men of Priene at Charax (see *Forschungen in Ephesos*, II, No. 1). It appears that there had been civil strife at Priene and one party had driven out the other. The banished party obtained the aid of the Ephesians who established them in a fort called Charax, probably on the boundary between the two cities, and agreed to protect them and supply them with arms. The decree dates from about the year 286 B.C.

A Greek Inscription in Alexandria.—In *C. R. Acad. Insc.* 1916, pp. 165-168, SEYMOUR DE RICCI republishes a Greek inscription in the museum of Alexandria, adding a third fragment not previously identified. It has to do with a *πολιτεια* of Lycians, whose duty it was to guard the cemeteries of Alexandria. They had apparently been derelict in their duty, and the lost portion of the inscription probably told of their punishment. The date 27 Thoth of the fifth year of Hadrian is equivalent to September 24, 120 A.D.

VASES

New Vases by Douris.—It has hitherto been difficult to assign with certainty any important large vases to Douris, the painter of cylices; but recently some fragments of a pelice at Petrograd have been published, which are evidently by the same hand as a cylix by Douris in Berlin. These bring in several other large vases, and so give opportunity for a more extended study of the stages of his work, the influences of other artists upon him, especially that of his teacher Euphronius, and the part he played in the development of the art of his time. In his use of the single draped figure he may be regarded as the father of the tendency to put meaningless figures on the reverse of vases. The whole of his work, some important examples of which are in the Boston Museum of Fine Arts, is discussed and chronologically regrouped by E. BUSCHOR, in *Jb. Arch. I. XXXI*, 1916, pp. 74-95 (3 pls.; 10 figs.).

COINS

Greek Coin-Dies.—The discussion of 'A Dekadrachm by Kimon' struck from a fractured die leads S. W. GROSE (*Num. Chron.* 1916, pp. 113-132; pl.) to a somewhat general discussion of the material and durability of Greek coin-dies. Specimens of coins struck from the same die are common rather than rare, as has been claimed by such authorities as Hill and Walters. Dies were not made of soft metal soon worn down (Blümner), but of hard tempered metal, which may often have been brittle from lack of knowledge of proper annealing. The unessential varieties among ancient dies of the same type are probably due to the preparation of a number for simultaneous use to increase the speed of output. In Sophocles, *Antigone* 475 and elsewhere *περὸς αὐτὸς* applied to metal probably means "brittle."

GENERAL AND MISCELLANEOUS

Receptacles for Lots.—In *Cl. Phil.* XI, 1916, pp. 278-292, F. E. ROBBINS interprets the phiale shown on a fifth century cylix at Berlin and that on a cista from Praeneste in the Barberini collection as receptacles for holding lots used for purposes of divination at Delphi.

The Thalamegus of Ptolemy IV.—The description of the famous house boat of Ptolemy IV on the Nile is discussed at length and made the basis of a reconstruction by F. CASPARI in *Jb. Arch. I. XXXI*, 1916, pp. 1-74 (pl.; 29 figs.). The Greek text by Callixenus of Rhodes, quoted by Athenaeus (*Deipnosophistae* V, 204d ff.), was written after the destruction of the vessel but from the notes of an eyewitness, whether the author or another. It gives the dimensions as: length 200 ells, width, 30 ells (105 m. \times 15.75 m.), a measurement falling between those of battleships and freighters. The hull was flat-bottomed, of light draft, and had high double prow and stern. The superstructure, which made it a veritable floating palace, was of wood, and probably filled the entire width and two thirds of the length. It contained some twenty apartments of various sizes and uses, fitted up with the greatest luxury, which extended one behind the other in two stories and were surrounded on three sides by an open colonnade of the full height, surmounted by an enclosed corridor, which thus stood above the roof of the main building. The mast, with one large sail of cotton, probably stood in a small open court which extended through both

stories. Measurements of details are lacking, but Caspari in his reconstruction assumes a unit of one eighth of the width, or $3\frac{1}{4}$ ells (1.97 m.) for the width of corridors, collonnades, and interior intercolumniations, with double this measure for the intercolumniations along the sides. Wall paintings, mosaics, and other works of art in Egypt and Italy, especially in Pompeii, illustrate many details of construction and decoration. Some features are mentioned which are not otherwise known to have occurred so early, while others recall the arrangements of Minoan palaces in Crete.

ITALY

ARCHITECTURE

Architectural Terra-cottas from Falerii.—In *B.S.R.* VIII, 1916, pp. 1-34 (2 pls.; 13 figs.), MARY TAYLOR and H. C. BRADSHAW publish and discuss the architectural terra-cottas from two temples at Falerii Veteres. These were found by the late Count Cozza in 1886-1887 (*Not. Scav.* 1887, pp. 137 ff; 1888, pp. 414 ff.) and belong to two temples, of the fourth-third and the third-second centuries B.C. The earlier, and smaller, is the so-called temple of Apollo; the other may have been built later on the same site. From the earlier temple important fragments of the pedimental sculptures are preserved. In the centre was, probably, the so-called Apollo, a seated figure of the Alexander type, at each side two standing figures (two males on one side, two females on the other) and reclining figures in the corners. The antefixes were figures in various attitudes. The acroteria at the sides were quadrigae, the central acroterium a standing figure. A gorgoneion was over the mutule at each end of the front. A few further fragments were found. All the sculptures belonged to the early Hellenistic period and were richly colored. The terra-cottas of the late temple comprised antefixes (alternate male and female winged figures), a central acroterium (an Ionic palmette rising from two spirals), a cornice consisting of cresting, sima, ovolo, and fascia, three sets of terra-cotta plaques adorned with lotus-pattern, spirals, and palmettes, tiles, roll-tiles, and some antefixes adorned with heads in relief, though these last may not have belonged to this temple. No remains of pedimental sculptures were found. The fragments furnish sufficient indications for a restoration of the temple.

SCULPTURE

A Relief in Egyptian Style.—In *B. Com. Rom.* XLIII, 1915, pp. 115-122, (pl.), G. S. GRAZIOSO describes a relief found a long time ago near the church of SS. Marcellino et Pietro and now in the Vatican. Its provenance is probably the Iseum of the third region. It was executed in Egyptian style in the time of Hadrian. The subject is a queen standing before a *naos* and bringing an offering to the sacred cow. A rough graffito of a cynocephalus on the relief seems to indicate that such a statue was found at the same time that the relief was discovered.

PAINTING

Two Etruscan Painted Tombs at Corneto.—Because of the continued and far-advanced decay of the paintings in the ancient rock tombs of Etruria, a

complete publication of them with illustrations from every available source is projected, and the material for two of the most important, on the site of Tarquinii, is now published by F. WEEGE in *Jb. Arch. I.* XXI, 1916, pp. 105-168 (13 pls.; 38 figs.). The so-called Stackelberg tomb or *Tomba del Triclinio*, discovered in 1823, was painted about 520-510 B.C., by a Greek artist, probably from Magna Graecia, who had lived among the Etruscans enough to understand their national life and spirit. This is the best actual survival of the North-Ionian style of wall painting from which the early red-figured vase painters copied, and it is of very great interest for subject as well as style. The walls are divided horizontally into three sections, the lowest one being a plain dark dado. The main frieze represents on the end opposite the entrance a funeral banquet or symposium, of three couches with six guests and three attendants, while the side and entrance walls show the ceremonial dance of youths and maidens with music, by which they are being entertained. The single figures are separated by shoots of laurel and myrtle growing from the ground, indicating an outdoor scene. A ceremonial pointed cap or mitre is worn by the female figures. On a narrower frieze above this is a full representation of the funeral games, divided into three parts by raised platforms for spectators at the two corners opposite the entrance. In a series of most varied and lifelike groups we see every stage of boxing, wrestling, discus-throwing, pole-vaulting, the pancration, and chariot racing, as well as a sacrifice to Hermes Epagoneus, the patron of athletes. The main part of this frieze is in a dark-on-light technique, but the groups of spectators at the corners as well as the whole of the wider frieze below are in light-on-dark. The presence of women among the on-lookers is evidence of the native usage, not copied from Athenian custom. The work as a whole is of very great artistic merit. It belongs to the era of the vase painters Epictetus and Euthymides. The other tomb, *Tomba dei Leopardi*, discovered in 1875, is a little later in date and somewhat simpler, having only one figured frieze, with funeral symposium and dance out-of-doors. It is not so fine a piece of work artistically, but is still excellently preserved, with bright colors, and some of the heads are wonderfully lifelike portraits. The left half is of inferior workmanship, as if done by a pupil or assistant of the master painter. Both tombs have a ceiling design which is probably of Egyptian origin. A wide flat central beam ornamented with rosettes separates two slightly sloping surfaces which are painted in checks of bright colors, as if representing a canopy of cloth. The animals called leopards or lionesses which occur in the gable ends of these and other tombs are probably the chetah or hunting leopard of India, which was occasionally kept for use in hunting or as a house pet by European princes as well as Asiatic, down to mediaeval times.

Forgotten Roman Wall Paintings.—In *B.S.R.* VIII, 1916, pp. 91-103 (7 pls.; 3 figs.) Mrs. ARTHUR STRONG publishes and discusses further forgotten fragments of ancient wall paintings in Rome (cf. *B.S.R.* VII, 1914, pp. 114-123; *A.J.A.* XIX, 1915, p. 197). These are in a private house in the Via de' Cerchi, the back of which is built against the southern slope of the Palatine, while the front approaches the northeast end of the Circus Maximus. The paintings of one room represent columns and before them servants in attitudes as if engaged in welcoming and serving guests. The style is in general the second (architectural) Pompeian style, though the life-size figures are unknown in Pompeian

art. The painting of the vault of a corridor behind this room consists of delicate decorative scroll work, including some plant and animal forms, arranged in bands, circles, and rectangles. The style is "Claudio-Neronian." Miss Van Deman dates the corridor in the time of Domitian or of Hadrian and the room first-mentioned in that of the Severans or a little later. Thus the styles of painting practised in the first century continued in use in the third.

INSCRIPTIONS

Epigraphical Notes.—As a result of a reëxamination of the epigraphical material put away in the storerooms of the Museo Nazionale, R. PARIBENI publishes the following notes (*B. Com. Rom.* XLIII, 1915, pp. 168-177): *C.I.L.* VI. 30709. FORTUNE CAMCESI is perhaps an error for FORTUNE CAMPE (N) SI. *C.I.L.* VI. 30876. The name in the erasure is not (ANTONIA)NAE but MAX(IMINIA)NAE. A piece of a slab, probably part of a calendar, with VENERI GENET(RICI) IN FORO CA(ESARIS). Cinerary urn with inscription: DISMANIBUS | SOSTRATES | PHILOMUSUS | Q. UMBRICI. MELIORIS | DISP | CONTUBERNALI | CARISSIMAE. B. M. Umbricius Melior is mentioned by Pliny, Tacitus, and Plutarch. A stele with the relief of a man lying on a couch with high back and sides. Inscription: D. M. C. IULIO FELICI IULIA HYALINE PATRONO ET CONIUGI BENEMERENTI FECIT. A fragment of marble with: D. M. IUL. VALENTIANUS SPEC(ULATOR). COH(ORTIS). VIII. PR(AETORIAE) CUM VALERINA MATRE VALENTINAE. F. From a columbarium: VERGILIA. C. L. | EUPHROSyne | LIBRARIA. A fragment of a slab of marble with: . . . O (CENTURIONI) LEG(IONIS) IIII SCYTHIC(AE) | . . . ET L. MAECIO L. F. POSTUMINO | . . . PJARTHENOPE. . . | . . . HJONORATUS. . . | . . . H(UIUS?) CORPOR(IS?) . . . Fragments of the slabs covering a large base recently found on the Palatine (?). IMP and CJOH. X URBAN. ANTONINIAN. | Q. POMPONIANI. | ANNAEUS L. F. CAM. PULCHER TIB(URTINUS) | BURRENUS C. F. POLL. MAXIMUS MUT(INENSIS). | GJEMINIUS C. F. POM. RUFINUS VOL(SINIENSIS).

Epigraphic Bulletin.—In their 'Revue des Publications relatives à l'Antiquité romaine' for January-June, 1916 (*R. Arch.*, fifth series, IV, 1916, pp. 199-216), R. CAGNAT and M. BESNIER give the text of 67 inscriptions (two Greek, the rest Latin) and notes on epigraphic publications.

COINS

Coinage of Nero.—In "an introductory study" of "one of the most complete monetary systems of antiquity," E. A. SYDENHAM divides Nero's coinage into two distinct periods, 54 to 63 A.D. and 64 to 68 A.D. In the first period no Senatorial brass was coined, and the types show no historical allusions, but the Senate and not the Emperor issued gold and silver. The coinage reform of 63 A.D. attempted to harmonize Roman and Greek systems and establish one standard for the empire. Brass was to stand to copper in relative value as $1\frac{1}{2}$ to 1. The globe symbol is not from Lugdunum (as Mowat claimed) but from a Roman mint, as the fabric proves. (*Num. Chron.* 1916, pp. 13-36; pl.)

Denarius in the Third Century A.D.—In a paper on the decline and fall of the denarius, C. OMAN points out that in 214 A.D. Caracalla did not issue in the so-called Antoninianus a double-denarius, but a coin valued at $1\frac{1}{2}$ denarii (80 grs. weight against 54). The aureus had fallen in weight (112 to 100 grs.), and perhaps 20 Antoniniani corresponded in value to an aureus. With the further reduction of the aureus the convenient relation disappeared, and the Antoniniani ceased to be struck, until they were revived under Gordian III about 242 A.D., when the aureus had practically vanished from ordinary circulation, and a new and showy coin was needed. The unhandy relation to the debased denarius drove out this older coin, which was last issued in considerable numbers under Postumus (the "Labors of Hercules" series). The quinarius went the same way; but the finer execution of these pieces makes it likely that they, like the small bronzes of Diocletian, were issued chiefly for donatives. (*Num. Chron.* 1916, pp. 37-60; pl.)

GENERAL AND MISCELLANEOUS

The Villa of the Gordiani.—At the third milestone on the Via Praenestina to the left of the road are the remains of a republican villa showing indications of having been used at least to 300 A.D. Other buildings appear to have been erected about 150 A.D. In *B. Com. Rom.* XLIII, 1915, pp. 136-167 (2 pls.) G. LUGLI thinks that the latter are the remains of the villa of the Gordiani, in possession of this noble and wealthy family before it acquired the imperial power. This villa was extended and rebuilt under Gordian III, who probably also joined the republican villa to his possessions. Under Constantine the estates on the right of the road were added to the original property and new structures were erected on both.

A Manual of Roman Archaeology.—Professor R. CAGNAT and Dr. V. CHAPOT have published the first volume of their new work on Roman archaeology. It is a book of 735 pages devoted to the monuments and sculpture. The authors discuss among other things materials, methods of construction, roads, bridges, harbors, cities, walls, gates, triumphal arches, cisterns, aqueducts, fountains, methods of distributing water, sewers, the Forum and its monuments, curiae, tribunes, voting places, basilicas, prisons, treasuries, public latrines, altars, temples, theatres, odeums, circuses, stadiums, baths, markets, granaries, shops, inns, bakeries, meeting-places, libraries, camps and frontier defences, trophies, columns, houses and palaces, villas and country houses, tombs and funeral monuments, the technique of the sculptor, statues of divinities and their attributes, portraiture, genre sculpture in the round and in relief, grave reliefs, historical and military reliefs, lamps, stucco reliefs and those of painted terra-cotta. [*Manuel d'archéologie romaine.* Par. R. Cagnat et V. Chapot. I. Les monuments; décoration des monuments; sculpture. Paris, 1917, A. Picard. xxvi, 735 pp.; 371 figs. 8 vo. 15 fr.]

A Judaeo-Pagan Sarcophagus.—In *R. Arch.*, fifth series, IV, 1916, pp. 1-16 (4 figs.), FRANZ CUMONT discusses a fragment of a sarcophagus in the Museo Nazionale, in Rome. It was formerly in the Museo Kircheriano (see Paribeni, *N. Bull. Arch. Crist.* XXI, 1915, pl. IV, 1, and p. 96). In the centre of the front is a medallion supported by two Victories. In the medallion is the seven-branched candlestick. Below the medallion is a Dionysiac scene, three young men treading grapes in a large basin. At the sides are

remains of the Four Seasons. Other equally interesting examples of the mixture of Jewish and Christian symbolism with Dionysiac elements are discussed and illustrated.

The Via Traiana.—In *B.S.R.* VIII, 1916, pp. 104-171 (27 figs.), THOMAS ASHBY and ROBERT GARDNER give a historical account of the Via Traiana, which led from Beneventum to Brundisium, with a careful description of its existing remains and the ancient monuments along its course. The various topographical and historical questions connected with this highway are discussed.

The Provinces of Hispania Citerior.—In a paper entitled 'Nota ad un Diploma Militare del Tempo del Nerone' (*B. Com. Rom.* XLIII, 1915, pp. 99-114) MARIA MARCHETTI shows that the three dioceses into which Augustus divided Hispania citerior were Asturia et Callaecia, Cantabria, Tarraconensis, not, as Kornemann claimed (*Festschr. für O. Hirschfeld*, pp. 233 ff.), Callaecia, Asturia et Cantabria, Tarraconensis. Further, that under Claudius Cantabria and Tarraconensis were combined.

Festus, the Author of the Breviarium.—In *B. Com. Rom.* XLIII, 1915, pp. 123-135, A. GARRONI argues that Rufius Festus Avienus of *C.I.L.* VI, 537, is identical with the translator of Aratus and the author of the *Descriptio Orbis Terrae* and the *Ora Maritima*. The compiler of the *Breviarium* is, however, a different man, probably the adversary of Eutropius (*Anm. Marc.* XXIX, 2, 22; etc.).

The Commissione Archeologica Comunale di Roma.—In *B. Com. Rom.* XLIII, 1915, pp. 328-341, is given the official record of the activity of the Commissione Archeologica Comunale di Roma from 1910 on.

SPAIN

Portae Geminae at Cordova.—In *B. Soc. Ant. Fr.* 1915, pp. 272-276, J. TOUTAIN shows that the words *portae geminae* on an altar found at Cordova in 1908 mean "double gate."

FRANCE

Punic Inscriptions in the Louvre.—In 1891 the Louvre acquired a collection of antiquities formerly belonging to Commander Marchant who had been in Tunisia before the French occupation. There were two hundred and twenty objects of one kind or another and thirty-four Punic stelae. In *C. R. Acad. Insc.* 1916, pp. 17-34 (4 figs.), J.-B. CHABOT publishes twelve of the inscribed stelae which had not been published. They are for the most part simple dedications. He also describes two uninscribed stelae which have figures rudely cut upon them. On one a woman with her right hand in a position of devotion and her left holding a bowl of fruit stands before an altar upon which is a bull's head. On the second stele a man is represented reclining upon a couch with two figures beside him. At his feet is a standing man, and near his head a seated woman. The motive of a bull's head on an altar is also found on an unedited stela from Carthage.

The Mosaic of the Drunkenness of Bacchus.—In *C. R. Acad. Insc.* 1916, pp. 286-294, P. FABIA discusses the large mosaic in the museum of Lyons repre-

senting the drunkenness of Bacchus. It was found in 1841, and was originally 9.53 m. by 4.75 m. The scenes were in forty-five squares arranged in five rows of eight. Eight of these have been lost since 1841. About one third of the whole mosaic is missing.

A Roman Mosaic at Sens.—In 1910 a large Roman mosaic known since 1893 (*C. R. Acad. Insc.* 1910, pp. 613 ff.) was uncovered at Sens. It is much injured, but the general plan of it can be made out. It was divided into thirty-five squares, most of which were filled with rosettes or geometrical patterns. In the middle is a medallion 1.69 m. in diameter in which are depicted a man on horseback and four frightened horses running in different directions. The subject is the Sun subduing his horses; not the fall of Phaethon as was formerly supposed. The artist had in mind Ovid's *Metamorphoses*, II, 314 f. and 398 f. In the corners were busts representing the four seasons, but Spring has disappeared. The mosaic probably dates from the first century A.D. (A. HÉRON DE VILLEFOSSE, *Mon. Piot*, XXI, 1913, pp. 89-109; pl.; 4 figs.)

Gallo-Roman Notes.—In *C. R. Acad. Insc.* 1916, pp. 66-83 (fig.), Dr. CAPITAN shows, apropos of the discovery of the bones of dogs at Amiens, how much dogs were loved in Gallo-Roman times. He also points out that a deposit on fragments of two vases found in the bottom of a pit at Amiens has been shown by chemical analysis to prove the existence of resined wine in Gallo-Roman times.

Inscribed Spindle-Weights.—In *C. R. Acad. Insc.* 1916, pp. 168-186, J. LOTH discusses certain spindle-weights found in Gaul which have upon them Latin inscriptions accompanied by Gallic words. He interprets *curmi* as *beer*, *geneta* as *girl* (often used as a term of affection), and *vimpi* as *handsome*. *Marcosior Maternia* he translates *equilare vellem*, *Maternia*.

The Wines of Gaul.—In *B. Com. Rom.* XLIII, 1915, pp. 279-291, LUIGI CANTARELLI brings out the fact that *vinum gemino sapore* (Pliny, *N. H.* XIV, 68) means wine with a very heavy flavor, which was used to improve other wines. Wine from Baeterra, which Pliny, *ibid.*, says was not exported, was brought into Rome after all, as is shown by two inscriptions from amphorae found at the Castra Praetoria. The *picatum* was a wine which naturally had a pitchy taste.

SWITZERLAND

The Disputer of Viège.—In *R. Ét. Anc.* XVIII, 1916, pp. 193-202 (2 figs.), W. DEONNA publishes additional evidence to prove that the object at the waist of the Disputer from Viège in the museum of Geneva (see *A.J.A.* XIX, 1915, p. 486) is a key. The five objects carried by the god are: 1. the mystic pot in the right hand; 2. the lightning nail, and, 3. the cosmic key at the waist; 4. the thunder mallet upon which the left hand rested; 5. the zigzag lightning on the left leg.

HUNGARY

Roman Antiquities in Kolozsvár.—In *Dolgozatok az Erdélyi Nemzeti Múzeum*, VII, 1916, pp. 1-133 (41 figs.), A. BUDAY publishes a number of antiquities chiefly in the National Museum at Kolozsvár, Hungary. There are four reliefs in private possession found at Várhely (Sarmizegethusa), representing

triple-bodied Hecate; two reliefs with votive ears, one inscribed in Greek; a marble group of Dionysus and two other figures; parts of two marble reliefs upon which Dionysus appears; a grave stone with two peacocks in relief on one side, and lions on two of the other sides; a similar stone which served as the base for a grave monument; the top of a grave stele in the form of a bearded head between recumbent lions; an altar with a pine cone above and below on three sides reliefs, the one in front portraying a man, a woman and a child, with the head of Medusa above, that on the left hand side Attis with two dolphins above, and that on the right hand side Cybele with a bird and a flowering branch above; a grave stele with a rudely cut winged figure on one side and a standing woman on the other; a torso of Priapus; a headless seated Cybele; two reliefs representing Silvanus; a similar relief with the figure of a nymph (Silvana?); a relief with Silvanus and Diana standing side by side; also one with the figure of Diana, which was probably similar; an Apollo in relief; a carved anta with figures of Dionysus above and Hercules and Mercury below; heads of Aesculapius and of Saturn; a relief of the Genius Castorum; a Mithra relief; and part of a votive tablet of Nemensis. A winged figure on a base inscribed *Primavera* is believed by the writer to date from the sixteenth century.

NORTHERN AFRICA

A Circular Temple at Carthage.—In *B. Soc. Ant. Fr.* 1915, pp. 309-316, J. TOUTAIN argues that the circular structure within a square at Carthage was a Phoenician temple as was thought by Davis many years ago. In the seventeenth century there was a similar building at Mohammedia which was proved by an inscription to be a temple of Saturn. In 1899 Gauckler found in an underground chamber at Carthage, not far from the circular building, images and cult objects which had come from a temple of Saturn.

Inscriptions from Algeria.—In *C. R. Acad. Insc.* 1916, pp. 242-250, J.-B. CHABOT discusses two Phoenician inscriptions, one found years ago at Constantine, Algeria, and the other at Ain Nechma. He also corrects the reading of a Latin inscription from Cheffia (Suppl. to *C.I.L.* 17392.)

Phoenician Inscriptions of Dougga.—In *C. R. Acad. Insc.* 1916, pp. 119-131, J.-B. CHABOT discusses in detail the Phoenician inscriptions of Dougga and points out their importance for the decipherment of Libyan texts.

The Grave Stele of a Priestess of Ceres.—In *R. Ét. Anc.* XVIII, 1916, pp. 181-186 (pl.), L.-A. CONSTANS publishes a grave stele of a priestess of Ceres found about fifteen years ago at Ain-Maja and now in the Museum of the Bardo. It is 1.25 m. high, 0.47 m. wide, and 0.40 m. thick. On the front in a niche is the standing figure of the priestess, and on each of the two sides of the stone is a woman carrying a basket on her head, perhaps representing Ceres, while below is the figure of a sow. On the front is the inscription, *Flavia M(arci) fil(ia) Tertul(l)a sacerdos viz(it) an(nis) c. . . .* The relief is interesting for the costume.

Adonis in Roman Africa.—In *B. Soc. Ant. Fr.* 1915, pp. 296-299, J. TOUTAIN shows that there are no grounds for believing that Adonis was worshipped in Roman Africa; that the words *sacerdos Adonis* in an inscription from Bechater should be interpreted *sacerdos Domini*, i.e. *Saturni*; and that in the dedication *Adoni Augusto sacrum* of the inscription of Khanguat el Hadjadj the *Adoni*

is equivalent to *Domino*, i.e. *Saturno*. The first word is not Adonis, but the Phoenician word *adon* which often precedes the name of Baal.

The Camps of the Third Legion in Africa.—In *C. R. Acad. Insc.* 1916, pp. 273-284, M. DE PACHTERE shows that the idea of Mommsen and others that the third legion Augusta was located at Tebessa during the first century A.D. is not correct. Recent discoveries of mile-stones, epitaphs of soldiers, etc., have made it clear that the *castra hiberna* of this legion was at Ammaedara until the year 74 or 75, and after that at Tebessa.

EARLY CHRISTIAN, BYZANTINE AND MEDIAEVAL ART

GENERAL AND MISCELLANEOUS

Ivory Caskets.—In *Art in America*, V, 1916, pp. 19-27 (3 figs.), R. S. LOOMIS writes on the fourteenth century secular ivory caskets in the Morgan collection. There are three complete ones and two detached panels. Subjects for these secular works were passed around till they became hackneyed and the same thing is found repeated over and over. Two subjects here identified for the first time are evidently intended to contrast grateful and ungrateful woman. One is Galahad's Arrival at the Castle of the Maidens, the other Enyas and the Wodehouse.

A Method of Dating North Mesopotamian Churches.—In *Or. Christ.* V, 1915, pp. 111-131, A. BAUMSTARK dates the churches of the Tûr 'Abdin and neighboring districts in northern Mesopotamia according to the relations of the sanctuary to the body of the church. Three types of plans reflect the development of the church service. The earliest has no separation of the presbytery from the congregation; next follows a type with chancel railing and curtains to shut off on occasion the clergy from the congregation; finally the sanctuary becomes an entirely separate room accessible only by a door. Corresponding to this development is the change in liturgy. Narsai (died 502) records a eucharistic ceremony without any concealing of the altar as would be the case in the first type of church mentioned. Jacob of Edessa (died 708) refers to the exposition of the altar to view at a certain stage in the ceremony, as would occur in the second type of church. George of Arbela (945-987 approximately) considers the separation of the sanctuary the most significant fact of the ceremony, as would correspond to the third type of church. This development is further proved by the literary and epigraphic dating of the arrangements of the third type in the later period and of their accompanying pastophoria, a recognized late development here. The date of churches of the first type must fall not later than the seventh century and the others follow in succession according to their plan. On this basis a list of the known monuments in chronological order is appended.

A Griffin on a Silk Fabric.—In *Burl. Mag.* XXIX, 1916, pp. 225-226 (4 figs.), A. F. KENDRICK discusses a fragment of a silk fabric showing a griffin's head and a portion of the arc of a large circle about it. The provenance of the piece before its purchase in Paris for the Victoria and Albert Museum, 1893, is unknown. Below the creature's head is a loop which by comparison with a carved slab of the parapet of St. Mark's, Venice, and with a similar textile in the Abbey of St. Waldburg at Eichstadt proves to be the trunk of a van-

quished elephant. The pluteus of St. Mark's seems to belong to the rebuilding of the tenth or eleventh century, though possibly then brought from elsewhere. The Eichstadt stuff was found in the tomb of Count Liutiger von Graisbach (d. 1074), who refounded the abbey. Both this and the South Kensington fragment are eastern, perhaps, arguing from the large size of the loom used, Constantinopolitan, work of about 1000. Closely related, but later, are a number of large loom products including one considerably different griffin fabric in the treasury of Sens Cathedral.

ITALY

Ravenna and the Orient.—In *Or. Christ.* V, 1915, pp. 83-110 (pl.; 8 figs.), J. STRZYGOWSKI studies the position of Ravenna as an outpost of eastern art. The brick architecture of the churches of basilica plan shows the traditional forms of brick architecture throughout the Hellenistic world, but the vaulted buildings like San Vitale and the so-called Mausoleum of Galla Placidia, as well as the two baptisteries, fit only in the line of oriental development. The mausoleum is based on the form of an eastern catacomb. San Vitale is a copy of Constantine's Octagon at Antioch. Theodoric's mausoleum, on the contrary, finds its parallels in the stone architecture of Armenia. Though some sarcophagi of Ravenna still show the scenes of salvation of the old funeral cycle, the favorite subject on them becomes the spread of the doctrine. This latter is an Antiochene conception. It is the subject of the ivory chair of Maximian and of the mosaics in the two baptisteries, San Vitale, and the so-called Mausoleum of Galla Placidia. An Alexandrian bone-carving, here illustrated for the first time, is a close parallel, showing as it does the enthroned Christ as teacher with the Apostles gathered about him. The mosaics of Sant' Apollinare Nuovo are also connected with Syria through the approximately Jacobite arrangement of the Christological scenes as well as through the composition of the decorative *ensemble* which immediately suggests the Rabula codex. The relation of the iconography of the Baptism and of the Enthroned Madonna of the Adoration, as these pictorial types are known in the art of Ravenna, to Palestinian iconography is further established by a gold encolpion in the author's possession. This object which is a capital document of the art types of the Holy Land is here studied in detail. Another decidedly oriental trait at Ravenna is the ornament. The old Ursiana, the first great church of Ravenna, was decorated in eastern style with secular scenes. Perso-Syrian candelabra and vine decoration occur repeatedly on the later monuments. Speaking generally the whole art of Ravenna is aesthetically eastern in character in that color replaces form, design supplants space.

The Facing of the Pillars of San Vitale.—In *Felix Ravenna*, XXI, 1916, pp. 879-891, G. GEROLA studies the marble facing of the pillars of San Vitale. All were restored in the last century and inaccurately, but the undertaking is so great that it will be necessary to restore the lower part of the pillars, now laid bare by recent excavations, in harmony with the modern, not the original appearance.

The Catacombs of S. Sebastiano.—In *B. Com. Rom.* XLIII, 1915, pp. 249-278 (pl.), O. MARUCCI shows that recent discoveries exclude the possibility that the sepulchre of the apostles Peter and Paul was under the present church, and confirm the traditional belief that it was in the so-called Platonia apos-

tolica. One of the graffiti is a record of the translation of S. Quirinus from Pannonia to Rome in the fourth century, which he interprets . . . *Mus-icus, Sumalus servus dei et Victorinus deteriore facto loco Quirinū navigerunt eius lustrationis causa.*

SPAIN

Spanish Embroidery.—In *Burl. Mag.* XXIX, 1916, pp. 297-299, 326-334 (5 figs.), G. SAVILLE discusses the cosmopolitan character of mediaeval embroidery with special reference to that of Spain. The international diplomatic and personal relations as well as the great fairs led to much mixing of styles. This caused foreign influences to manifest themselves in Spain continuously and to such an extent as to cause the attribution of some examples of Spanish embroidery to places of origin other than Spain itself. Examples of pieces that might well lead to such confusion are given. In the author's possession is the figured pillar of an orphrey which would certainly pass for French, on account of its rich color, its design, and the finish and grace of the work, were it not for the insuperable evidence of the Gallician inscriptions from the *Cantigas* of Alfonso X, the Wise. This piece of about 1250 reveals that Spanish broderers were at that early date in advance of the other countries and doing work comparable in quality with *opus anglicanum*. In the Lyons museum is a fifteenth century chasuble which would appear German, because of its composition, were it not for the Spanish types of figures and details and crude coloring, added to the fact that the piece was bought in Spain. Another chasuble in the Victoria and Albert Museum seems French in front and German behind; but in fact, on closer comparison it proves to be neither but shows in figures and designs indubitable evidence of being actually of Spanish workmanship. An embroidery of the fourteenth century owned by Count de Valencia de Don Juan shows a reading of cinquefoil arches which theoretically exists in English embroideries only, yet it too is surely Spanish. The foreign domination which was so restrictive to indigenous Spanish arts brought about all the more freely by its gradual dissolution the introduction of supplementary art influences from abroad.

FRANCE

The Frescoes of the Garderobe at Avignon.—In *Gaz. B.-A.* XII, 1916, pp. 293-316 (pl. 9 figs.), is a posthumous article by R. ANDRÉ-MICHEL on the frescoes discovered in 1906 in the new garderobe of the palace of the Popes at Avignon. The subjects, besides mere decorative designs, are scenes of country life, fishing, and hunting. The decoration is probably attributable to the collaboration of French and Italian artists who were working at Avignon in the time of Clement VI, under the direction of Matteo da Viterbo.

The Mediaeval Buildings of Saint-Loup-de-Naud.—In *Mon. Piot*, XXI, 1913, pp. 111-144 (4 pls.; 15 figs.), LOUISE ROBLOT-DELONDRE describes the mediaeval buildings of Saint-Loup-de-Naud. They consist of a church of basilica type with an apse and a transept, which may be dated by the architecture and the frescoes in the twelfth century; a priory, now in ruins, which was built at the end of the twelfth century; and a tower known as "La Haute-Maison" which dates from the thirteenth century, although there was some rebuilding in the fifteenth and seventeenth centuries.

The Cathedral of Rheims.—In *R. Arch.*, fifth series, IV, 1916, pp. 140-156, J. MAYON subjects to searching criticism an article in *Le Temps* (September 28, 1915, reprinted in *R. Arch.*, fifth series, II, 1915, pp. 364-369) and a book by Louis Bréhier (*La Cathédrale de Reims; une œuvre française*. Paris, H. Laurens). The criticism of the book is concerned with details, the book itself being highly praised.

The Miniatures of the Livy of the Sorbonne.—In *Mon. Piot*, XXI, 1913, pp. 202-231 (3 pls.; 8 figs.), P. DURRIEU discusses the miniatures in a manuscript known as the Livy of the Sorbonne which is now in the Bibliothèque Nationale (Nos. 20071 and 20072). It contains a translation of the first two decades of Livy and dates from the second half of the fifteenth century. It was originally one large folio of 409 leaves with writing in two columns, but is now divided into two. When the book was written spaces were left for twenty full page illustrations at the beginnings of the different books, and for 153 smaller miniatures in the text. There are today four large and forty-eight small miniatures preserved, while those which stood at the beginning of Books II and VI were apparently painted but have been lost. They are the work of several hands and show the influence of Jean Fouquet, but none of them are by him. The writer finds a resemblance between some of them and miniatures in the Boccaccio in Munich.

HUNGARY

Saxon Churches of Nagysink.—In *Dolgozatok az Erdélyi Nemzeti Múzeum*, VII, 1916, pp. 134-165 (16 figs.), J. HALAVÁTS discusses seven early Saxon churches in the district of Nagysink, Hungary. They are of basilica type with a nave covered by a flat ceiling, and aisles half the height of the nave and separated from it by columns. There is no transept. At the east end of the nave is an apse, and there may be small apses at the east end of the aisles. The churches discussed are: 1. The Church of the Augsburg Confession at Kisprázmár built in the thirteenth century and restored in the eighteenth. 2. The church at Kissink, built in 1421 and restored in the fifteenth and eighteenth centuries. This church still has its fortification wall about it. 3. The Church of the Augsburg Confession at Nagysink built in the early part of the thirteenth century. It suffered severely during the Turkish invasion of 1493, and was rebuilt in Gothic style at the beginning of the sixteenth century, but it still retains many details of the original construction. 4. The Church of the Augsburg Confession at Brulya, built in the thirteenth century and restored at various times, especially in 1900. Because of the Turkish invasion of 1493 this church was turned into a fort. 5. The Church of the Augsburg Confession at Jakabfalva, built in the thirteenth century and restored at the beginning of the sixteenth. 6. The Church of the Augsburg Confession at Százhalom, of Gothic style, dating from the beginning of the fifteenth century. 7. The Church of the Augsburg Confession at Boldogváros dating from the second half of the fifteenth century, but rebuilt in 1848 and 1849.

GREAT BRITAIN

Master Walter of Colchester and the Master of the Chichester Roundel.—In *Burl. Mag.* XXIX, 1916, pp. 189-196 (3 figs.), W. R. LETHABY studies

the English Primitive School of St. Albans. For the development of English painting in the thirteenth century he suggests some such scheme as the following: Winchester the oldest school, St. Albans leading from 1200 to 1250, new Winchester development from say 1240 to 1270, rise of Westminster from about 1260. The St. Albans monastic school of painting is represented by thirteenth century paintings on the great square piers of the nave of the church. The dominating personality of St. Albans was Master Walter of Colchester (1180-1248), whom Matthew Paris, the nearly contemporary artist and writer, describes as a "praelectus pictor" and "sculptor et pictor incomparabilis." Earlier writers, except Westlake who concurs with the present one, have attributed to Master Walter the paintings on the easternmost pier, but this can in reality hardly be earlier than 1280, for the Crucifixion is of the advanced type of the transition from Romanesque to Gothic found on the Syon cope (ca. 1300). Also the subject below, the Coronation of the Virgin, is in itself late and it, too, is here treated as on the Syon cope. Some little censuring angels have in fact almost a fourteenth century appearance. The earliest of the pier paintings is rather to be recognized on the westernmost pier. Here the Crucifixion is iconographically the earliest of the whole progressive series and scarcely free from Byzantinism. The feet are nailed separately and the head is held high not dropped below the bar. The picture on the same pier below is a Mariola of typical early thirteenth century style. Technical confirmation of the early attribution of this pier is found besides in the fact that only here the flesh tints have blackened with age due to the use of lead. This use of red lead for flesh tints appears suddenly about 1200 and as suddenly disappears. But the best evidence for the attribution of this pier to the earliest phase of the school and hence practically to its founder Master Walter is offered by a contemporary obituary roll (Fig. 2) lately acquired by the British Museum (Egerton 2849). This roll was written to announce the death of Lucy, first prioress of the Holy Cross and St. Mary at Castle Hedingham, Essex. The priory was founded before 1191 and even allowing for an extremely long tenure the obituary could hardly be dated later than 1230, possibly two decades before. Besides other subjects of like style the roll shows, and in a strikingly similar treatment, the two scenes of the pier. There is no room for doubt that the roll must be by Master Walter or, what amounts to the same thing from our present day standpoint, by one of his brothers in art. An explanatory ground is furnished by the propinquity of Colchester and Castle Hedingham. Master Walter's fame even extended to Canterbury, where he received the commission for the St. Thomas shrine. The pavement then laid down in front of the shrine with representations of the Labors of the Year is still preserved, but it shows French workmanship though the designs themselves have not been proved French. Some other fragments of the decoration of St. Albans may be ascribed to Master Walter and it would be tempting to give him credit for the most beautiful known thirteenth century English mural painting, the Chichester roundel. But this already shows Virgin and Child gazing rapturously at each other, hence can hardly date before the second half of the century. This Mariola denies, by the way, that Master Walter was "pictor incomparabilis" in other ways than priority. For its iconography, diapered background, costumes, etc., it should fall to the Winchester school which took the torch and carried further the good work from where St. Albans left off.

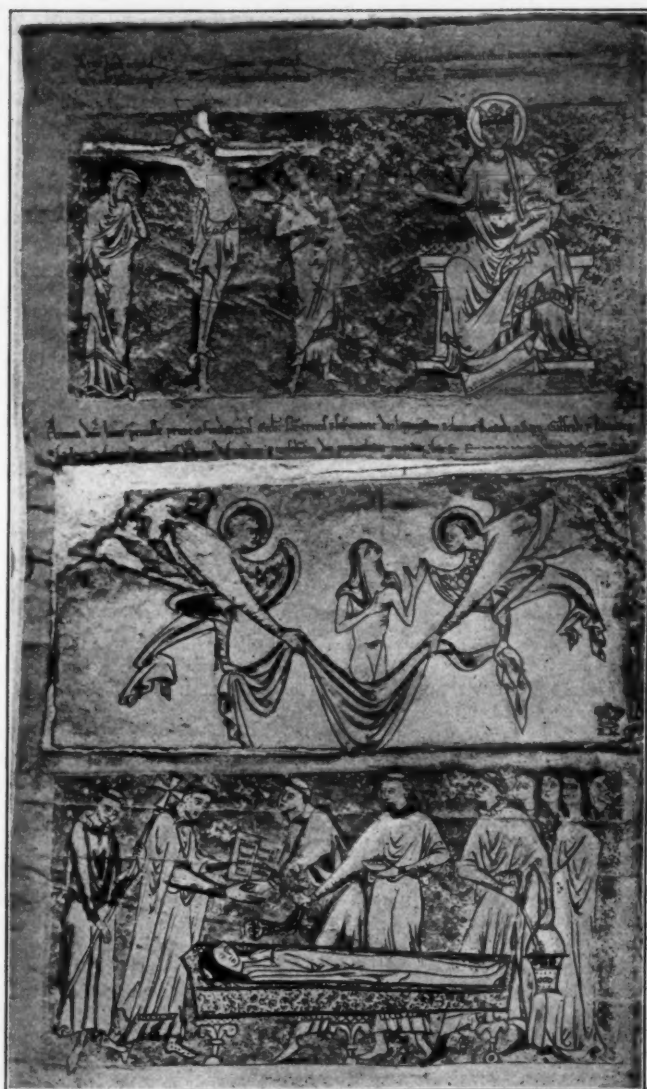


FIGURE 2.—OBITUARY ROLL IN THE BRITISH MUSEUM.

The Early Winchester School.—In *Burl. Mag.* XXIX, 1916, pp. 281-289 (5 figs.), W. R. LETHABY gathers the documentary evidence for Master William of Westminster (ca. 1200-1280), the most important representative of the thirteenth century Winchester school of painting. This painter was in the service of the king, Henry III, from 1240 until the king's death in 1272, first at Winchester, and later at Westminster, where he eventually became the "King's Painter." Of possible works we have the vault of the chapel of the Guardian Angels at Winchester, a head in the cloister of Windsor, perhaps that of St. Edward the Confessor, and a St. Faith in the Revestry at Westminster Abbey with a panel composition below. The Hardham Mariola, found and almost immediately afterwards destroyed by rain at Hardham Priory near Pulborough in 1912, seems to have been also in his style. Winchester passed down to Master William the traditions of a school that went back to King Alfred and had produced such works as the Durham embroideries, the Benedictional of St. Aethelwold, the Westminster Bible, and the Cottonian Psalter.

The Master of the Westminster Altarpiece.—In *Burl. Mag.* XXIX, 1916, pp. 351-357 (7 figs.), W. R. LETHABY discusses the thirteenth century retable for the high altar of Westminster now only partly preserved combined in a tabernacle frame. The whole work seems to have represented the Ministry and Glory of Christ. By comparison with the two well-known psalters written for St. Louis it is identifiable as the finest product of the Ste. Chapelle school at Paris. It may have come to England as a gift from the saint himself to the new abbey which his "cousin" of England was there building.

RENAISSANCE ART

GENERAL AND MISCELLANEOUS

Supposed Portraits of Sculptors.—When a picture represents a man looking at or surrounded by works of painting, no one thinks of immediately labelling it a portrait of a painter but rather thinks it one of an amateur. Curiously the same cautious practice is not followed in regard to pictures in which works of sculpture are shown. These are at once dubbed "portrait of a sculptor". This error is exposed by S. REINACH in *Rev. Arch.* III, 1916, pp. 399-417 (6 figs.). Examples are Louvre No. 1184, Uffizi No. 1154, Pitti No. 207, portrait by Bronzino in the Simon collection at Berlin, etc.,—all called without any evidence portraits of sculptors. The very existence of such a picture as the Hampton Court portrait of Odoni by Lotto, in which an amateur is seen surrounded by plastic works, should make one hesitate to see a sculptor in the Giorgionesque Lansdowne portrait of a man with compass and mutilated statue, No. 89 of the Hermitage, No. 216 of the Vienna gallery, No. 81 of the Benson collection, and the like. Where the sitters in such pictures can actually be identified they do not by any means turn out necessarily to be sculptors, e.g. Titian's Jacopo da Strada at Vienna, Moroni's Marcantonio Savelli in the Kaufmann collection at Berlin, Van Dyck's Meerestraaten at Cassel, etc.

ITALY

A Piedmontese Imitator of Jacques Daret.—In *Art in America*, IV, 1916, pp. 262-268 (3 figs.), F. J. MATHER, Jr., brings to the attention of students a

charming Piedmontese imitator of Jacques Daret. Though none of Daret's works have been traced in Italian collections, the Italian painter seems, to judge from his technique, to have worked on Italian soil. He began as an assimilator of the transalpine style in an Adoration of the Child owned by the author and later, changing to an oil medium, continued as a frank imitator in an Adoration of the Child in the Corporation Galleries, Glasgow. Spanzotto of Vercelli is as yet the nearest guess at his name.

The Portraits of Isabella d'Este.—In *Rass. Bibl. Arte It.* XVIII, 1915, pp. 93-97, G. FRIZZONI takes up in turn the supposed portraits of Isabella d'Este, listed by Luzio, and shows that not one certain representation of this much portrayed patroness of art is now recognizable.

A Painting by Bartolomeo Caporali.—In *Boll. Arte*, X, 1916, pp. 276-278 (3 figs.), U. GNOLI publishes a hitherto overlooked primitive panel by Bartolomeo Caporali.

Tintoretto's Diana.—In *Art in America*, IV, 1916, pp. 353-357 (2 figs.), A. POPE writes on the unfinished Diana by Tintoretto recently purchased by Mr. Samuel Sachs, New York. It is the picture bought in Venice by Ruskin.

The Giottesque School of Rimini.—In *Burl. Mag.* XXIX, 1916, pp. 272-281 (6 figs.), 313-320 (7 figs.), O. SIRÉN discusses Giuliano, Pietro, and Giovanni da Rimini, three painters whose style is due to Giotto's modification of the Byzantine tradition, when, according to Riccobaldo Ferrarese, he worked in the Romagna. Giuliano painted a signed and dated altarpiece of 1307 from Urbania, now in the Gardner collection, Boston. A companion piece is an altarpiece in S. Maria, Cesi. He probably helped in the decoration at the abbey of S. Maria, Pomposa, and possibly in the frescoes of the suburban church of S. Maria in Porto Fuori, Ravenna. He died in 1346. Pietro is known by a signed crucifix at Urbania. Using this as a point of departure, there are assigned to him: most of the frescoes of S. Maria in Porto Fuori, Ravenna; a Stigmatization of St. Francis, Minneapolis museum; a Deposition, Palazzo Gentili, Viterbo; a Deposition, Vatican gallery; and a Martyrdom of St. Agatha in the Blumenthal collection, New York. The study of Giovanni Baronzio da Rimini is based on a signed crucifix in S. Francesco at Mercatello and an altarpiece in the Urbino gallery. Former writers have already added by attribution various works, notably a polyptych in S. Francesco at Mercatello. Here are further assigned: a Giottesque Crucifixion in the Vatican gallery; a part in the frescoes at S. Maria in Porto Fuori, Ravenna, and likewise in those of the chapel of St. Nicholas at Tolentino; an Adoration of the Magi curiously combined with the Ablutions of the Christ Child, in the collection of Sir Hubert Parry at Highnam Court; two small panels at Munich (Nos. 279 and 980) already connected by Fry with the last mentioned; and a dismembered altarpiece of which the centre panel is a frontal St. John Baptist in Christ Church Library at Oxford, and four recognized side panels are an Annunciation to Zacharias and a St. John in Prison in a private collection in England, a Birth of St. John in a private collection in America, and a Feast of Herod at a Paris dealer's. Five passion scenes with a Last Judgment in the Venice Academy and one similar picture in the Metropolitan Museum might, perhaps, be added to the list. In a note to the same article it is pointed out by the editor that T. Borenius has found external reasons against the attribution given to the Oxford St.

John. Until the end of the eighteenth century it was at the ancient church of S. Maria degli Ughi at Florence and in *L'Etrusca pittrice*, Florence, 1791-5 no side panels are mentioned or engraved.

Pietro da Barga.—In *Burl. Mag.* XXIX, 1916, pp. 363-373 (19 figs.), G. DE NICOLA writes on a series of small bronzes by the minor sixteenth century sculptor, Pietro da Barga. This artist was in the employ of Cardinal Fernando de' Medici and made for him bronze statuettes of what were then the famous pieces of ancient and modern sculpture. These have been passed down to the direct heir of the Medici collection, the National Museum in the Bargello, Florence.

Bellini's Madonna in the Lehman Collection.—In *Art in America*, V, 1916, pp. 3-5 (pl.), B. BERENSON dates the Madonna recently bought by Mr. Philip Lehman, New York, in Bellini's Mantegnesque period about 1470.

Masolino's Annunciation.—In *Art in America*, IV, 1916, pp. 305-311 (fig.), B. BERENSON, apropos of the passage of Masolino's Annunciation from the collection of Lord Wemyss to that of Mr. Henry Goldman, New York, discusses but does not solve the knotty problem of the chronology of Masolino.

Titian's Lovers.—In *Burl. Mag.* XXIX, 1916, p. 373 (2 figs.), O. L. CUST writes a note on the Lovers ascribed to Titian in Buckingham Palace. This seems to be the best version of the subject though anything but good. A copy signed by Ambrogio Figino has recently been discovered and is in the possession of Signor Cereza at Bergamo. The only evidence advanced for Titian's authorship is an entry in Van Dyck's Venetian notes of 1622.

Three Pictures in the Borghese Gallery.—In *Boll. Arte*, X, 1916, pp. 266-272 (3 figs.), G. CANTALAMESSA offers his attributions for three doubtful pictures in the Borghese Gallery. The first, a portrait of a man, which has never borne a definite artist's name, is assigned to Giovanni Mansueti. The second, a portrait of a woman long recognized as close to Carpaccio, is ascribed to the master himself and dated about 1510, the time of the Glorification of St. Ursula. The third, an Adoration of the Magi called variously a Filippo Lauri or a Giacinto Gimignani, is now attributed to El Greco.

Mosaics Inspired by Melozzo da Forlì.—In *Boll. Arte*, X, 1916, pp. 257-263 (10 figs.), G. FRIZZONI writes on the mosaics of the subterranean chapel of St. Helen at S. Croce in Gerusalemme, Rome. They have been traditionally accredited to designs of Baldassarre Peruzzi, carried out by order of Bernardino Carvajal, Cardinal of Portugal. But the style of the work on the whole belies the sixteenth century and the style of Peruzzi. The style is in fact that of Melozzo da Forlì and that of the period in which he was in Rome (a. 1484). Whether he actually furnished the design or not, the source of inspiration is undoubtedly his art as can be seen by a comparison of these mosaics with the decorations of S. Biagio, Forlì, and his works in Rome such as the St. Peter in the grotto of the Vatican. Most likely Peruzzi merely restored them and made some additions, notably the representation of the Cardinal of Portugal, who paid for the work, at the feet of St. Helen.

The Tarocchi Prints.—In *The Print Collector's Quarterly*, VI, 1916, pp. 37-88 (13 figs.), E. H. RICHTER writes on the famous Tarocchi prints. These form a sort of picture lesson-book or encyclopaedia of knowledge, showing as they do in five groups of ten prints each the ranks and conditions of men, Apollo and the Muses, arts and sciences, genii and virtues, and planets and

spheres. Many of the subjects resemble those of playing-cards and the series takes its name from the Venetian game, Tarocchi. These engravings are extant in two editions or series, known as E and S. The former can be closely dated, for its designs at least, if not its actual prints, were copied in miniatures of 1467, and the prints themselves are pasted in and written over in a manuscript of 1468. The relation of the two series is hotly disputed and the question of priority is made more difficult by the fact that E is well engraved in North Italian style while S is engraved in Central Italian style, and in all the extant examples badly damaged by reworking. But in spite of that, the S prints on the average are not much inferior, while certain matters of posing, placing, and attributes, as well as the mere fact that the demand continued long enough for the plates to need so much retouching, would surely imply that the earlier stage is S. Both E and S go back obviously to some highly developed series of illustrations of Mediaeval ideas in Renaissance forms. The dialect is Venetian, the drawing thought by some to be Ferrarese.

Ottavio Leoni.—In the *Print Collector's Quarterly*, VI, 1916, pp. 321-373 (17 figs.), T. H. THOMAS discusses the almost forgotten, fashionable portraitist of Rome in the early seventeenth century, Ottavio Leoni, 1578-1630. His drawings and engravings are now our source for the study of his work. Of the former a volume of 27 is preserved in the Biblioteca Marucelliana, Florence. They reveal a master hand with the crayon, though they are very simple and unpretentious busts without much interest in anything beyond the likeness. His engravings reveal the application of the crayon technique to a new art. In his effort to work with the burin after the same fashion as with the crayon Leoni quite unintentionally invented stipple, but without realizing the importance of it as an independent medium. Nor was he followed in this new departure. Precisely because he was always amateurish in his attitude toward engraving, he gives an unconventional quality of artistic tone harmony that is unique. He planned an "Iconography" of the virtuosi of his day, which may conceivably have been the germ of Van Dyck's similar scheme. Otherwise the only artist in whom his influence may be surmised is Morin.

Notes on Italian Medals.—In his twenty-second installment of notes on Italian medals (*Burl. Mag.* XXIX, 1916, pp. 251-255; pl.), G. F. HILL writes on the work of a monogrammist and on Bombarda. To the five known signed works of the former he adds a signed medal of Antonio Pucci. He adds also by attribution an unsigned medal of Ippolito d'Este and one of Giulia de' Medici and seeks to read the monogram on a medal of Margaret of Austria other than the one by this monogrammist generally known. The monogram, of which the exact form and constituent letters are disputed, may possibly stand for Tommaso Perugino who was engraver at the Papal mint 1534-41, the approximate date of all these medals. To Bombarda are ascribed the medal of an anonymous lady and that of an anonymous boy. The latter may be the son of Camilla Ruggieri and in that case be the point of contact between the artistic or personal relation of Bombarba and Ruspagliari. For Bombarda came under the influence of Ruspagliari and there is a known medal by Ruspagliari of that lady.

Identification of Lotto's Protonotary Giuliano.—In *Burl. Mag.* XXIX, 1916, p. 245 (2 figs.), G. F. HILL publishes a unique medal in the Brescia museum of a Protonotary, Giovanni Giuliano, whom he identifies with the Protonotary

Giuliano whose portrait by Lotto is in the National Gallery. The baptismal name being known, the Diaries of Marino Sanudo throw some further light on this individual. The picture is conjecturally dated 1522, the medal shows a younger man and would thus fall earlier. But it is undated and it does not seem possible to attribute it to any known Venetian medallist of the period.

The Palazzo Odescalchi.—In *B.S.R.* VIII, 1916, pp. 55-90 (16 figs.), THOMAS ASHBY gives a historical account, with documents, of the Palazzo Odescalchi in part of which the British School at Rome was housed for some fourteen years prior to its removal to its present quarters in Valle Giulia. In classical times the site formed a part of that of the barracks of the first cohort of the *vigiles*. In mediaeval times it was occupied by small houses in which a hospital was founded in 1388. In the sixteenth century the Colonna family had a palace here. This was rented for a time in the seventeenth century to the Ludovisi and sold in 1661 to Cardinal Flavio Chigi, by whom the completion of the palace was entrusted to Lorenzo Bernini in 1665. After the death of the Cardinal, in 1693, the palace was let to Don Livio Odescalchi who had bought the rich collections of antiquities formed by Queen Christina of Sweden. The collection of gems and coins was sold to the Vatican in 1794. The statuary was sold in 1724 to Philip V of Spain. The statues now in the palace were acquired later. A catalogue of them is given. The pictures were bought for the Duc d'Orléans, and the collection was dispersed in 1792. The palace was purchased by Baldassare Odescalchi in 1745.

Family Notices of Piero della Francesca.—In *Boll. Arte*, X, 1916, pp. 272-275, A. DEL VITA publishes archival notices concerning the family and especially the mother of Piero della Francesca.

BELGIUM AND HOLLAND

Drawings by Cornelis Bos and Cornelis Floris.—In *Burl. Mag.* XXIX, 1916, pp. 325-326 (6 figs.), P. BUSCHMANN attributes two drawings in the Library of Christ Church, Oxford, to Cornelis Bos and a drawing in the Fitzwilliam Museum, Cambridge, to Cornelis Floris. One of the Oxford drawings is an Urnbearer, the other a Son of Laocoon. Engravings of both of them, modified in detail and reversed, are found by Bos. Of the Cambridge drawing by Floris, Two Grotesque Masks, no such direct evidence is known from his works, but the style and the subject matter, down to the last detail, are very characteristic.

The Descent from the Cross by David.—In *Burl. Mag.* XXIX, 1916, pp. 309-310 (pl.), M. CONWAY illustrates a late work by Gerard David, a Descent from the Cross in an English private collection. The five so-called copies of this well-known picture are held to be in reality repetitions of an abbreviated and different half-length version.

Rubens' Venus and Adonis.—In *Z. Bild. K.* XXVII, 1916, pp. 143-146 (3 figs.), R. OLDENBOURG studies the various examples of the Parting of Venus and Adonis from the studio of Rubens. Of the many pictures of this subject that in the Düsseldorf Academy has the only claim to be by Rubens himself, though he may conceivably have touched parts of the one in the Kaiser-Friedrich Museum. The authenticity of the Düsseldorf painting rests on the clearness of the action, the large scale of the figures, the exclusion of acces-

series, the consequent superior composition, and the warmer tones. Its date would fall shortly after the return from Italy, 1608. The picture is mentioned in a letter of Domenikus Baudius, 1612. The Berlin picture, the cooler, harder colors of which point to the years 1614-15 approximately, has already clouded the motives by making the Adonis stand, by adding meaningless landscape, by giving up some of the main compositional lines, and by coarsening the gestures. The other variations (Hermitage, The Hague and Dresden Galleries, Becker Collection in Berlin, etc.) are at best the ordinary manufacture of the Rubens atelier between 1615 and 1625.

Two Pictures by Joos van Cleve.—In *Art in America*, IV, 1916, pp. 343-352 (4. figs.), S. RUBINSTEIN publishes two paintings attributed to Joos van Cleve in the Blumenthal collection, New York. One is a half-length panel of the Holy Family very similar to one in the National Gallery, London. The other is a triptych of the Crucifixion like that in the Naples museum. Joos van Cleve or van der Becke, called Cleve the Elder in contradistinction to Joos van Cleve or Sotto van Cleve, called Van Cleve le Fou, is the same as the Master of the Death of the Virgin, and seems the pupil of Jan Joest.

The Two Ostades.—In *Z. Bild. K.* XXVII, 1915, pp. 1-10 (9 figs.), W. v. BODE analyses the art of the two Ostades. Adriaen van Ostade, the older, was



FIGURE 3.—FRENCH TAPESTRY, XV CENTURY.
BOSTON.

the more important and productive; while his brother after revealing, in a tantalizing manner, his unique personality and landscape power, died at the early age of twenty-eight. In their peasant pictures one can trace with interest step by step the gradual improvement in the economic conditions of the country life they depicted as the effects of the Thirty Years' War passed away.

Side Lines of Dutch Seventeenth Century Painters.—In *Z. Bild. K. XXVII*, 1916, pp. 113-120, 129-142 (23 figs.), E. PLIETZSCH, excluding Rembrandt and

his school, the italianizing Utrecht school, and the Haarlem academicians, discusses the allegorical, mythological, historical, and religious pictures of the painters of Holland in the seventeenth century, true Dutch painters, whose interests lay in material fields and who dealt with these subjects only incidentally and not too well. But even Metzu, Vermeer, Potter, etc., painted allegories, and practically all an occasional religious subject. The variety of subject did the artists more credit when it did not call for too much imagination. For instance, A. Brouwer and A. v. Ostade are excellent in their rare examples of portraiture, as are S. v. Ruysdael and G. Schalken in their pictures of still life, and A. Cuyp and G. ter Borch in architecture,—unusual as these various fields were to them. The fact that each painter made at will successful ventures into painting along unaccustomed lines shows that



FIGURE 4.—FRENCH TAPESTRY AFTER DÜRER.
BOSTON.

the limitation of subject regularly practised was not a limitation of talent but rather a matter of choice expressive of the peculiar personality of the man.

Tapestry Designed by Bernard Van Orley.—In *Art in America*, IV, 1916, pp. 258-262 (2 figs.), S. RUBINSTEIN discusses a tapestry, one of the famous Hunts of Maximilian, in the Metropolitan Museum. This set was designed by Bernard Van Orley, whose cartoons, including the one for the New York

tapestry, are together with a number of the tapestries still preserved in the Louvre.

HUNGARY

Data on Hungarian Painters of the Seventeenth Century.—In *Dolgozatok az Erdélyi Nemzeti Múzeum*, VII, 1916, pp. 165-174, L. KELEMEN points out that much information about Hungarian painters of the seventeenth century is to be found in the records of the Unitarian church of Kolozsvár. These date back to 1631.

GREAT BRITAIN

Drawings of Ancient Paintings in English Collections.—In *B.S.R.* VIII, 1916, pp. 35-54, THOMAS ASHBY gives a catalogue of further drawings (cf. *B.S.R.* VII, 1914, pp. 1-62, *A.J.A.* XIX, 1915, p. 198) of ancient paintings in English collections. At Holkham Hall two volumes contain 80 and 78 drawings by Francesco Bartoli (ca. 1675—ca. 1730), son of Pietro Sante Bartoli. All in Vol. I and nearly all in Vol. II are colored. A volume belonging to Mr. Baddeley (cf. *B.S.R.* VI, 1913, p. 489) contains 69 drawings by Pietro Sante Bartoli, and a volume at Chatworth 61 drawings by Gaetano Piccini.



FIGURE 5.—FRENCH TAPESTRY, XVI CENTURY. BOSTON.

UNITED STATES

French Gothic Tapestries in Boston.—In *B. Mus. F. A.* XIV, 1916, pp. 4-7 (3 figs.), 30-31 (4 figs.), S. G. F. writes on the three French Gothic tapestries lately purchased for the Boston Museum of Fine Arts. The first (Fig. 3) is of the Verdure type with two children or putti playing in a field of flowers, a work of the fifteenth century. The second (Fig. 4) shows, likewise on a Verdure ground and with the addition of a comical dog and a quaint child, a figure subject that is found to be based on Dürer's engraving "The Turkish Family," B. 85. The tapestry is incomplete, so that the specific application of the subject, if it had any, is unexplained. It is interesting to note that the weaver worked from Dürer's engraving direct, not from either of the two known imitations. However, this engraving is not exactly dated, and it is placed all the way from 1486 to 1503 by various students. Hence the tapestry can only be roughly dated about the turn of the century. The third tapestry (Fig. 5) falls in the early sixteenth century. It represents Music and corresponds so closely to another allegorical subject, Arithmetic, in the Cluny Museum, Paris, that it seems safe to say that they were part of the same set. In the Boston example, Music, a female figure, is enthroned and attended by nine men and a boy, who play on divers instruments. This puzzling inscription is on a scroll in the bottom of the field:

*Invenere locum per me modulamina vocum
Dat notula scire musica docta lire.*

German Wood Sculpture at the Rhode Island School of Design.—In *Bull. R. I. School of Design*, IV, 1916, pp. 2-3 (3 figs.), L. E. ROWE discusses three examples of German wood sculpture recently added to the museum.

First in importance is a bust of St. John Baptist, Westphalian, fifteenth century (Fig. 6). It is of linden wood and retains traces of its coloring. The other two pieces, also showing traces of coloring and carved in linden, are a Tyrolese Bishop and a Franconian Joseph of Arimathea (?). Both are of the early sixteenth century.

Paintings by El Greco in America.—In *Art. in America*, IV, 1916, pp. 245-257 (5 figs.), 311-327 (7 figs.; pl.), A. L. MAYER discusses at length paintings by El Greco that have found their way to America. The portrait of Vincentio Anastagi in the Frick collection is as important a picture as the famous portrait of Guevara in the Havemeyer collection, particularly because of its sig-



FIGURE 6.—WOODEN BUST OF ST. JOHN BAPTIST. PROVIDENCE.

nature, its early date (ca. 1571), and the fact that only three life-size portraits are attributed to the master. Most of his religious subjects El Greco painted

over and over again so that it becomes of the utmost importance to determine their relative order. For his pictures of the Holy Family the following order is proposed: Hispanic Society, New York (early nineties); Widener collection—Madonna and two saints not strictly a Holy Family—Philadelphia (1597-99); Nemes collection, Budapest (p. 1599); Royal Gallery, Bucharest, and St. Ann's Hospital, Toledo (p. 1600); Prado, Madrid; Van Horne collection, Montreal (1604-05). A second example of the subject in the collection of the Hispanic Society is the copy of Greco's studio assistant, Preboste. The finest of the list is the one in the Nemes collection. The problem of the Feast in the House of Simon is simpler, its order being: Vincent collection, Esher (a. 1612); Hispanic Society—dependent work by Greco's son Jorge Manuel—(1609-12); Miethke gallery, Vienna. The order of the Adoration of the Shepherds is: S. Domingo el Antiguo, side altar, Toledo (1577-79); Royal Gallery, Bucharest (1590-95); S. Domingo, main altar, Toledo; two in New York, one in the Blumenthal collection seeming a further development of the later Toledo and especially of the Bucharest composition, one in the Metropolitan Museum seeming a further development of the earlier Toledo composition. The order of the Expulsion of the Money-changers from the Temple, as modified by recent study is: Cook collection, Richmond, and Yarborough collection (both early, Italian period); hypothetical lost or unknown transitional example; Frick collection, New York, a variant of which is in the National Gallery, London (p. 1600); Prado, Madrid, from San Ginés (very latest period). America has thus representative material for these major problems of Greco's development. Of single figures by Greco the following are to be noted: Santiago, Huntington collection, New York, and Head of a Saint, Van Horne collection, Montreal (both of the middle nineties); St. Simeon, or so-called Evangelist, Huntington collection (1604-07); Heads of Apostles, probably Philip and James Minor, Blumenthal collection (latest period); St. Jerome as Cardinal, Frick collection, also Lehman collection (both p. 1600). Earlier examples of this last mentioned subject are one in the National Gallery, London, two in the possession of the Marqués de Castro Serna, Madrid, and an abbreviated one in the Bonnat collection, Bayonne.

AMERICAN ARCHAEOLOGY

GENERAL AND MISCELLANEOUS

Monolithic Axes and their Distribution in Ancient America.—In *Contr. Mus. Amer. Ind.* II, vi (13 pp.; 6 pls.), M. H. SAVILLE discusses the distribution of the monolithic axe (this being one where blade and handle are one piece of stone, the form being generally that of a celt in a wooden handle). Their centre of distribution seems to be Hayti and some of the small islands to the north. They have been found in various parts of the southeastern portion of the United States and are fairly common in southern Central America. As far as known but two specimens have ever been found in South America, and none from the Lesser Antilles, Porto Rico, or Jamaica.

The Cult of the Axe.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 301-315; 2 pls.; 14 figs.), G. G. MACCURDY discusses stone axes, mainly of the monolithic type, from the southeastern United States, the West Indies, and Middle America. He compares them with certain forms from Europe.

The Distribution of an Arawak Pendant.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 316-319; pl.), C. W. MEAD discusses the distribution of a form of Arawak pendant found in the West Indies and in northern South America.

Aboriginal Forms of Burial in the Eastern United States.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 31-43), D. I. BUSHNELL, Jr., gives a synopsis of the early literature relating to the aboriginal forms of burial in the eastern United States.

Use of Adobe in Prehistoric Dwellings of the Southwest.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 241-252; 5 pls.), N. M. JUDD discusses the use of adobe in the southwest. There are three main types of wall in which adobe is used, (1) walls of stone slabs cemented with adobe mortar, (2) walls of interwoven reeds covered with adobe plaster, and (3) walls built entirely of adobe. The adobe was not made into regular blocks until after contact with the whites, when the natives were quick to recognize the advantage of the brick form.

The Problem of the Red-Paint People.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 359-365; 4 pls.), W. K. MOOREHEAD discusses the Red-Paint culture. He finds that it is confined to the state of Maine, and centers in the lower Penobscot Basin. It is marked from the culture of the Algonquin peoples by eight types of objects found in the graves; stone gouges, adze-blades, plummets, long slender slate spears, quartzite spearpoints, crescents, effigies, and red paint.

Flint Working.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 397-402; 3 pls.; fig.), N. C. NELSON describes the methods of flint working used by Ishi, a member of the Yara tribe in California. These methods are not primitive as he uses iron tools to chip bottle-glass.

Flint Flaking.—In *Arch. Rep. Ontario*, 1915, pp. 63-70, F. EAMES, thinks that sometimes the Indians used the method of fire and water for flaking flints.

Similarities in Amulets from the Northern Antilles.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 24-30; 3 pls.) THEODOOR DE BOOY compares certain amulets from widely scattered islands of the northern Antilles. He says they may be called "*zemis*" (deities). Regardless of where they were collected, these figures are always devoid of arms, have legs flexed under erect body, have triangular piece of stone between the legs, and have the head surmounted by a head ornament. Hence they probably represent the same *zemi* though they range over several hundred miles.

Supplementary Series in the Maya Inscriptions.—In *Holmes Anniversary Volume* (Washington, 1916, pp. 366-396; 10 pls.; test figs.), S. G. MORLEY states that the Supplementary Series in the Maya stellae are in some way connected with the moon. He thinks that one of the series indicates whether the lunar month in which the date falls was a 29 or a 30 day one.

The Mexican Calendar.—In *University of California Pub. in Amer. Arch. and Ethn.* XI, pp. 297-398 (38 figures and a bibliography), T. T. WATERMAN gives a general treatment of the Aztec calendar and discusses the variation in the signs used to represent the twenty days. In *Amer. Anth.* XVIII, pp. 53-80 (3 figures and a bibliography), H. J. SPINDEN argues against the pre-Columbian introduction of the Old World zodiac into America. He believes

that none of the proofs advanced for that position involve anything in any way connected with the zodiac.

Tikal.—In the *Bul. Pan-American Union*, XLIII, pp. 319-337 (2 maps; 8 pls.), H. O. SANBERG gives a review of the various archaeological studies which have been made on the site of Tikal. His information is derived mainly from the works of Maudsley, Charnay, Maler, Tozzer, Spinden, and Morley.

Peruvian Textiles.—In the *Report* of the National Association of Cotton Manufacturers, Annual Meeting in Boston, 1916 (10 figs.), M. D. CRAWFORD asserts that in spite of the simplicity of the manufacturing processes of old Peruvian textiles "the resulting fibre is in rather better condition than the product of our best machines." He goes on to say, "From the same grade of staple . . . better yarns were never spun than have been found in Peru." He lists the principal styles of cotton weaving which occurred.



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